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A

MILITARY REPORT

ON THE

COUNTRY OF BHUTAN:

CONTAINING

ALL THE INFORMATION OF MILITARY IMPORTANCE WHICH HAS BEEN COLLECTED UP TO DATE

(12th July 1866.)

BY

LIEUT. C. M. MACGREGOR,

Deputy Assistant Quarter-Master-General, late Bhutan Field Force.

Calcutta:

PRINTED AT THE BENGAL SECRETARIAT PRESS.

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No. 151C.

FROM COLONEL JOHN S. PATON,
Quarter-Master-General,

TO THE OFFICER COMMANDING
EASTERN FRONTIER DISTRICT *viâ* JULPIGOREE.

Agra, 21*st November* 1866.

SIR,

I HAVE the honor, in acknowledging receipt of the report on Bhutan by Lieutenant MacGregor, Officiating Deputy Assistant Quarter-Master-General, to acquaint you that, as soon as the Commander-in-Chief has time to peruse the same, the orders passed thereon by His Excellency will be duly communicated.

I have the honor to be,
SIR,
Your most obedient Servant,

JOHN S. PATON,
Quarter-Master-General.

No. 1092.

FROM LIEUTENANT C. M. MACGREGOR,

Officiating Deputy Assistant Quarter-Master-General,

TO THE QUARTER-MASTER-GENERAL.

Darjeeling, 12th July 1866.

SIR,

AGREEABLY to paragraph 8 of Quarter-Master-General's circular No. 122 (General), dated 5th December 1864, I have the honor to submit the accompanying report on the country of Bhutan for the information of His Excellency the Commander-in-Chief, and in doing so it is necessary that I should make a few remarks on the mode of its compilation.

2. It will be noticed that I have strictly confined myself to furnishing a military report of that country, having endeavoured to write such a report as would enable an officer entrusted with any future operations against Bhutan to become speedily acquainted with all the information of military importance which has, as far as I know, been collected up to date.

3. I have thus limited myself because the reports of Turner, Pemberton, Griffiths, and Eden, contain ample information on other subjects, and I have not time to include a consideration of these points, to carry on the current work of this department on this frontier, and to collect additional information of the numerous countries and tribes on this frontier, regarding whom so little is known at present.

4. My sources of information have been :—

First.—The oral testimony of many Bhuteahs of all ranks, thoroughly sifted and tested in all possible ways.

Second.—The published accounts of the various missions that have entered Bhutan.

Third.—Intimate personal communication with officers who have visited any part of the country.

Fourth.—Personal observation, extending I believe over a larger portion of Bhutan than that of any officer except those who accompanied the missions.

5. It may be inquired why this report was not submitted before, when the operations were going on. If so, I beg to say that I was then only in possession of parts of it, and all that I did know was at the disposal of General Tytler, the officer to whom the Government had entrusted the conduct of these operations.

6. And this reminds me that I must not conclude without stating the great obligations I am under to Brigadier-General Fraser Tytler, C.B., late commanding Bhutan Field Force, for his kind assistance in enabling me to procure information, and his able advice in directing my inquiries. In fact, so much has this been the case, that I beg to state that the more valuable portions of this report must be considered his; the feebler parts—the mere compiling and arranging—mine.

I have the honor to be,

SIR,

Your most obedient Servant,

C. M. MACGREGOR, *Lieut.*,

Offg. Depy. Asst. Quarter-Master-General, North-Eastern Frontier.

NOTICE.

This report was written seven years ago, and consequently I have found it very difficult to correct errors in the manuscript; more especially in that of the vocabulary, all the Bhuteah I ever knew having quite gone out of my head.

C. M. MACGREGOR, *Lieut.-Col.*,
Assistant Quarter-Master-General.

Fort William,
29*th September* 1873.

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C. M. MACGREGOR, *Lieut.-Col.*,
Assistant Quarter-Master-General.

FORT WILLIAM,
29*th September* 1873.

BHUTAN.

A.—GENERAL DESCRIPTION OF BHUTAN.

THE country known as Bhutan is situated between the 28° and 26° 45' parallels of north latitude, and the 89° 30' and 92° of east longitude.

Boundaries. 1

It is bounded on the north by the Zang and Ovi, districts of south Thibet; east by the independent state of Towang; west by the district of Phari, in Thibet, and the river Teesta; and south by the plain country known as the Dooars. It is about 200 miles in length and about 75 miles in breadth, with an area of about 15,000 square miles.

In giving these boundaries, I am aware that a great proportion of the hill country has passed into the possession of the British Government; but I include all in this report, because the portion which has become British Bhutan is equally unknown with the rest, and should equally be described. The exact boundaries also between British Bhutan and Bhutan Proper have not been determined, but I believe it is intended to include in the former all the country between the Teesta and Dechu rivers up to the Giepmochi Mountain from the eastern or left bank of the Dechu. I am informed it is intended that the boundary should be run along the foot of the hills to the spurs which are thrown out to the west from the Tchinchu La Mountain above Buxa, when the boundary line will run up this spur, and, including this mountain, will then follow one of the eastern spurs to the point where they are stopped by the Tchinchu. Thence to the Deochu nuddee below Dewangiri the boundary will again follow the foot of the hills, and on reaching this stream it will proceed up the bed of it to a point where a spur, thrown out from the high peak above Meeroo, hits it; whence, mounting this spur, it will take in the hill above Meeroo and descend again to the plains by one of the eastern spurs of that mountain. Thence the foot of the hills will again form the boundary. When these boundaries have been definitely settled, I will forward a statement of them.

Ancient limits. 2.

I refrain from any comparison of these limits with those which have existed at various times, as it were unprofitable to waste time over a subject of so little interest.

Political Divisions. 3.

The grand political divisions of Bhutan are six in number, viz. Paro, Timpoo Puna, Taga, Angdophorung, and Tongsa. The approximate boundaries of these will be seen in the map which accompanies this report. These districts, the first and last of which are governed by Penlows, and the rest by Zongpes,

Sub-divisions. 4.

are again sub-divided into smaller counties under the jurisdiction of Toomas and 'Sooms,' or, as we call them, *Soobahs*. I could give an approximation also of the boundaries of these sub-divisions, but it would serve no useful purpose to do so, as it is certain that, however powerless the Deb Rajah may be over the six provinces above enumerated, the rulers of these have sufficient authority over the petty officials under them to make them liable to be considered (with perfect justice) as responsible for their acts.

Natural divisions. 5.

The natural divisions of Bhutan may be regarded as those afforded by the valleys. Thus it may be divided into the primary valleys of the Am-Mochu, Tchinchu, Pochu Mochu, and Dangmechu, and these might again be sub-divided into the secondary valleys of the Somchu, Saychu, Dooncbu, Harchu, Parchu, Sochu, Tanchu, Tagachu, Mateechu, Kooroochu, and Kolochu.

Climatic divisions. 6.

Other divisions. 7.

Bhutan is also capable of a marked climatic division. The never-changing dampness and relaxing climate of the lower and outer ranges presents a marked difference to the cold, dry, and bracing climate of Central Bhutan, which is itself very dissimilar to the bleak and inclement north; and the geologist, the botanist, the ethnologist, and the geographer, might also find and work out for themselves sufficient differences to induce other divisions. The botanist would find the dense luxuriant vegetation of the outer ranges similar to that of the plains of Bengal, but very unlike the less luxuriant and more European nature of the vegetation in Central Bhutan, or to the stunted scanty growth in the north. The ethnologist might note the strong contrast between the dark-complexioned squalid inhabitants of the south, and the fair, healthy, extremely robust people of the north. The geographer would not fail to remark the difference between the peculiarly precipitous nature of the slopes in the mountains of the outer ranges and the more gradual and undulating slopes of the much higher mountains in the interior, and so it might go on. The curious might find many other points of resemblance. Imagination and enthusiasm would doubtless also enable the zoologist, the ornithologist, the linguist, the theologist, and others, to find marked difference in Bhutan. Such may be interesting to these, but they should find no place here.

B.—PRINCIPAL RANGES OF MOUNTAINS.

General features. 1.

The general aspect of Bhutan is that of a series of confined mountain valleys forming the beds of impetuous mountain torrents running between the precipitous spurs which are thrown out from the snow-clad range of the Bhutan Himalayas, and the chief characteristic of these mountains is the extremely rugged and precipitous nature of their slopes, and the almost total want of any spaces of level ground, which are the usual, though not extensive, accompaniment of all mountains in the world.

Direction of the Ranges. 2.

Donkiah Ranges. 3.

The general direction of the ranges in Western Bhutan is from north-west to south-east, while in the east this direction changes to from north-east to south-west. In the present imperfect state of the information of Bhutan, it is difficult to speak much in detail of these ranges, yet I will attempt it. To commence then from the west: It will be seen that the Donkiah Mountain, which towers to a height of 23,186 feet, throws out a long spur, which runs irregularly, and with varying direction, but generally to the south, forming the water-shed of the Teesta on the west and of the Am-Mochu on the east. This, which I shall call the Donkiah range, following the invariable law of all the secondary ranges in Nepal, Sikkim, and Bhutan, gradually decreases in height till we come to the Black Rock, 17,572, to the Chola Peak, 17,325, and then to the peak of Giepmochi or Giepsemo, 14,578 feet. Passing by the spurs which this range throws out in Sikkim, we come to the Giepmochi, and here it is found that two great furcations occur; one running south-west, the other south-east. The first of these, being the Pango La range, forms the water-shed of the Rong-chu on the north (the southern boundaries of Sikkim at this point, and on the south of the numerous torrents, such as the Chel nuddee, which flow in the vicinity of Daling); the second being the Toole La range, which aids by the shed of its streams to replenish the Dechu on the one hand, and Am-Mochu on the other. This range is then lost in numerous smaller spurs, which blend with the plains near Daling, Sipchu, and Chamoorchee.

The next peak of the Himalayas which claims attention is the sacred mountain of Chumulari (height 23,944), the object alike of the veneration of the Buddhist and the Hindoo. From this stupendous height a secondary range runs out in a southerly direction, and forms here the western boundary of Bhutan as well as the western water-shed of the Am-Mochu. Shortly after leaving the main range of the Himalayas, it throws out a range to the south-east, which, forming the north water-shed of the Parchu, runs on till it is ended by the Tchinchu below Tasichogong. Further south again it throws out another range, which forms the boundary between the valleys of Harchu and Parchu, where it also is ended by the Tchinchu. More south again a third range is thrown out, which also first takes a south-east direction, but on reaching the Tchinchu it is not, like the two others, terminated by that river, but turns abruptly to the south, and passing on forms the boundary between the provinces of Paro and Timpoo till its ramifications are lost in the plains between Bala and Buxa. But this third range, which may be called the Tegong La range (that being the highest known point), must not be dismissed so summarily, for it throws out numerous stupendous and—only as compared with their parent range—minor spurs, which run generally to the south, forming the water-sheds of the Se'chu, the Somchu, and Doonchu, all of them feeders of the Mochu, and which may be named the Chona La, Too La, and the Seli La ranges. To turn now to the snowy peak above Lingjee and Gasse, with the name of which we are not even acquainted, we find the same thing occurs. Another range is hence thrown out to the south, which follows throughout a singularly uniform direction, forming in its whole length the water-shed of the two rivers, the Tchinchu and the Pochu, alone, till it disappears in the low lands to the north of Haldibaree in the Dooars. This range, hemmed in as it is throughout its whole extent by these rivers, does not, as far as can be judged, throw out any spurs of sufficient magnitude to warrant a separate description; and I am strengthened in this belief by the fact that neither the Tchinchu on the east, nor the Pochu on the west, receives in their whole length any stream of any size. Up to this point the excellent sketch map of Western Bhutan by Captain Austen has enabled me to speak with tolerable certainty of these ranges and their ramifications, but we have now come to the regions of the unknown, and I desire that what follows regarding the ranges in Eastern Bhutan may be received with reserve; it being borne in mind at the same time that I think it will be found that a knowledge of the situation of the peaks in the parent range, and of the general direction of the principal rivers, gives fair grounds for arriving at a pretty correct estimate of the run of the ranges.

Chumulari Range. 4.

Travelling, then, still to the east, it is to be noticed that there is a peak due north of Punakha, which has been fixed by Mr. Lane as of great altitude. This peak throws out a spur nearly due south, whose ramifications are almost immediately stopped by the junction of the Pochu and the Mochu. I think, but it is merely supposition, that the next range which leaves the Himalayas rises from a peak north of, and midway between Punakha and Tongsa; its first known and evident ramification being that which it throws out to the south-west, and which forms the water-shed of the Pochu and the Tanchu. It then gives a bend to the south-east, and running on becomes the ridge of the Peele La, which is crossed on the road to Punakha from Tongsoo; then, still continuing south-east, it rises into the peak known as the Black Mountain, 16,098 feet. Thence this peak throws out two main ramifications,—one south-west, towards the Pochu, by whose waters it is finally ended, and another to the south-east, which is ended either by the Monass or

Ranges north of Punakha. 6.

Black Mountain Range. 7.

the Aie, according as the two theories advanced under section "Rivers" as to the indentity of the Tongsa river are correct. This is but a theory, and I should therefore show on what grounds I found it. I do not think that the Mateechu can run to the west of the Black Mountain, because there is no outlet for it in the plains, the Champamattee and the Aie being small streams, totally unlike the other rivers, whose origin is known to be in the snows, and because, as I said, the Black Mountain throws out a main spur to the south-west, which spur is crossed on the road from Cheerung to Bishan Sing. It is to be remarked that the range called the Jori La, which is crossed as above, is the highest point of the whole road to Punakha by this route, and running south-west it bears evident signs of emanating from some peak to the north-east which must be of considerable height, as the Jori La is itself near 8,000. Now, if the Peele La and the Black Mountain were unconnected, and the former was directly on the same range as the Jori La, which is due south of it, it is not likely that the Jori La would be 8,000, as the Peele La itself, 40 miles to the north as the crow flies, is only 10,000 feet; and again there cannot be two main ranges, that of the Peele La and the Black Mountain, else where is the drainage that according to all rules should be between them? There is yet another cause which leads me to suppose that I am correct in regard to this range: this arises from a peculiarity of the Cheerung route into Bhutan, viz. that it goes over a series of spurs, all emanating from the east, the main ridge of which is far distant, which would not be the case if this range ran due south from the Peele La to the Jori La.

Yato La Range. 8. Nearly due north of Tongsoo it will be observed that there is a peak marked B, and fixed by Mr. Lane of the Great Trigonometrical Survey at 24,737. I am of opinion that this peak throws out a spur to the south, the continuation of which was crossed by Pemberton between Biyagur and Tongsa, and is mentioned as "a snow pass" called the Yato La. This range runs on, and is *the same* as is crossed on the road from Jongar to Jemgaon, where my Bhuteah informants say there is a pass on which snow sometimes falls; it is then stopped by the junction of the Moorchangfoo with the Mateechu, which is described as a large river by Griffiths running under Biyagur, and which is crossed on the road from Jongar to Tongsa, and also on the road from Bagh Dooar to Tongsa.

Roodoo La Range. 9. North of the Roodoola ridge is another peak; and as the Roodoo La, 12,000 feet high, is the only snow pass which is crossed on the road from Lingtsi to Beyaka, I think we may fairly infer that this ridge is thrown out from the peak above mentioned; and as on the Jongar route to Tongsa there is only one ridge to be crossed between the rivers Kooroochoo and Moorchangfoo, which rivers pass Lingtsi and Beyaka respectively, we may conclude that this ridge is continued south, crosses this route, and is eventually ended by the junction of the Mateechu and Dangmechu.

Donga Range. 10. To the north again of the Donga La ridge is a peak fixed by Mr. Lane, reaching a height of 20,965. I think a spur is thrown out from this, of which the Donga La ridge is a continuation. It is to be remarked that between the Kolochu and Kooroochu rivers Pemberton only crossed one ridge. I therefore am of opinion that this range runs between these rivers, and is terminated by the junction of the Kooroochu and Dangmechu. With a view of determining whether this ridge continued as I suppose, I tried hard to get a route from either the Kooroosam to Tashangtsi direct, or from Tashgong to Lingtsi direct; but all my informants persisted that they knew of no road. But on the road from Kenkar to Tongla a low pass, called the Dempo La, is crossed, the height of which

would agree very nearly with what this range would probably be so near its termination.

The next peak is that named Dand, fixed at 20,576 feet. This, I think, throws out a spur which forms the water-shed of the Kooroochu and Kolochu, and is then abruptly stopped by the junction of these two rivers with the Dangmechu. Kollong Range. 11.

The next range emanates from the peaks E, F, and H, fixed by Mr. Lane at 21,278, 23,066, and 22,422 respectively, and takes a direction south-east, and throwing out spurs which are terminated to the north by the Monass, of which it forms the northern water-shed, it enters Bhutan Proper, passes to the south of Tasgong, and is the ridge which is crossed between that place and Dewangiri, and continuing on it is the ridge on which Kegunpa and Saleeka are situated; thence, gradually decreasing in height, it throws out spurs to the south (on one of the ramifications of which Dewangiri is situated), till it is stayed by the Dangmechu at Bagh Dooar, which here enters the plains. I think this range, as far as south of Tashgong, will be found to be the true boundary between Bhutan and Towang, and thence one of the spurs of that range to the east of the Bor nuddee. Eastern-most range. 12.

I have now given a short sketch of what I believe to be the most probable direction and the sources of all the principal ranges in Bhutan. The details of each range will appear more properly in the various divisions of this report: that is, when I am speaking of the passes, defiles, valleys, and roads of the country.

C.—PASSES.

In speaking of the passes in Bhutan, I will first take those which lead over the great northern range of the Bhutan Himalayas to Shigatzee, Gianchee L'hassa, and the eastern parts of Thibet.

Passes into Thibet.—Commencing from the west, the first pass we come to is that of the Piem La, which was traversed by Turner in 1784 and by Bogle at an earlier date, and is described by the former as "so rugged and precipitous" that they were "obliged to have recourse to their hands and feet." He also remarks, with reference to the fortalice of Dukkazong within the Paro jurisdiction, that the Bhuteahs "can have no better defence against inroads than the bleak barren country which intervenes to the north between them and Thibet, or the steep impracticable roads." Notwithstanding this unfavorable description, it is certain that laden animals can and do traverse this pass, and that it is the most frequented in Western Bhutan. It leads into Thibet at Phari, whence, turning north and passing the sacred mountain of Chumulari by "an easy and scarcely perceptible ascent," the traveller finds himself in Thibet Proper. Piem La Pass. 1.

The next pass is that known as the Yale La, which leads from Tasichozong to the frontier post of Lingjee, belonging to the Bhuteahs. The ascent on the southern side of this pass is described by the travelling merchant of the Timpoo Zongpé, who informed me he crossed it nearly every year, as not very steep, and the descent on the other side is said to be remarkably gradual. This pass is shut by snow for three months in the year. The road from Lingjee probably joins the road followed by Turner. Yale La Pass. 2.

This pass leads from Punakha up the valley of the Pochu to Gassezong, whence it crosses into Thibet and joins Turner's route to Gianchee. It is said to follow the western bank of a large lake, probably the Yamdo Yeumtso. Uge Pass. 3.

I was informed that there was a pass by the banks of the Pochu, but that it was very seldom used. I could not get hold of a man who had been by it. Pass by the Pochu. 4.

Pass to the north of Tongsa. 5.

I have been unable to ascertain if there is a route which leads by the banks of Mateechu to any pass north of Tongsa. All my informants say they know nothing of any such pass, and add that everything going from Tongsa to Thibet has to go *vid* Beyaka, whence there is a very good road and a pass practicable for laden animals.

By Beyaka. 6.

Pass north of Boomdangtang. 7.

The next pass is one on the road from Boomdangtang, of which, however, I know nothing more than that it exists.

Passes by the Kooroochu, Kolochu, and Dangmechu. 8.

I am told, and Pemberton also says, that there are roads from Lingtsi, Tashangsti, and Tashgong, which lead to passes over the great range by the banks of the Kooroochu, Kolochu, and Dangmechu, respectively. This is a very meagre account of these passes; but the reason I have been unable to get more information regarding them is because the men who are best acquainted with them very seldom visit the southern portions of Bhutan. I shall not, however, abate my endeavours to procure further information regarding them, which I shall submit in a supplementary report. I am not without hopes that I shall be able to do something here (Darjeeling), where there are great numbers of Thibetans.

Passes over the minor ranges of Bhutan. 9.

The passes over the minor ranges in Bhutan are, as might have been expected, very numerous; but as they will all be described as fully as possible under the section "Routes" of this report, I shall confine myself here to mere mention of them, referring for details to the number of the route in which the pass occurs.

Passes over the Pango La range. 10.

The passes over the Pango La range (*vide* B. 3) are, first, Pango La, which is the main and most frequented pass from Western Bhutan into Sikkim (for a description of which *vide* route No. 16); the Retse La, also between these countries; and lastly the Laba Pass (route No. 11), the main pass between Dalingkot and Darjeeling and Dalingkot and Sikkim.

Toole La passes. 11.

The passes over the Toole La range (B. 3) are the Toole La (route 18), on the road from Sipchu to Sangbi, and the Lewa La (No. 1), on that from Chamoorchee to Hah.

Chumulari passes. 12.

The Chumulari range (B. 4) with its spurs presents numerous passes, viz. the Piem La, already described (C. 1); Meere La (33), on the road from Hah to Chumbi; and I believe there is a pass which leads from Sangbi to Chumbi.

Kote La passes. 13.

On the range which divides the northern portion of Paro from Timpoo (B. 4), the passes are the Kote La, on the road from Paro to Lingjee, hardly ever used, and the Bie La (No. 40), on the main road from Paro to Tasichozong. There is also Pome La (No. 41), on the same road.

Chi La passes. 14

The next spur from the above range to the south, the Chi La, presents the following passes:—the Kale La, between Doje Zong and Hah, and the Saka La, Chi La, and another (27), which are all passes between Hah and Paro; last on this range comes the Dole La (No. 2).

Tegong La passes. 15.

The next spur, that of the Tegong La, also offers numerous well-known passes, viz. Tegong La (22), between Sangbi and Hah; the Seli La (No. 1), between Chamoorchee and Hah; Loome La (31), on the Bala route; and the Soogeeah La (31), between Chuka and Doonah. There are other minor passes to the south of these (33).

Tagoo La passes.

We now come to the passes over the Tagoo La range, which divides the Tchinchu from the Pochu Mochu. The first known to the north is the Tchinchu La (43), used chiefly by Thibetans and others going from Lingjee to Punakha; the Dokien La (42), main pass between Tasichozong and Punakha; the Hinle La (44), between the former place and Angdophorung; the Biefoo La, by which Paro can communicate direct with Angdophorung; the Tagoo (37), between Chopcha and Tagana; the Donle La (35),

between Chuka and Tagana ; the Namfoo La (34), between Murichom and Tagana.

On the Black Mountain range (B. 7) there are the passes of Peele La (47), on main road from Tongsa to Punakha, and I have been informed that there are points of passage at the Side La, Shole La, and Sawa La. The Jori La (6) is the point where the Bishan Sing route crosses the range. Black Mountain passes.

On this range (B. 8) the only passes I know of are the Yato La (53), on the main road Beyaka to Tongsa, and a pass, name unknown (48), between Jongar and Jemgaon. Yato La passes.

The next great range is the Roodoo La (B. 9). The passes over this are the highest in the country, and consists of the Roodoo La (53), between Lingtsi and Beyaka ; the Tomsa La, Outa La, and Lato La, on the road from Jongar to Tongsa. Roodoo La passes.

The passes over the Dongala (B. 10) are the Donga La (52), between Tassangsee and Linchee. I do not know of any other pass. Donga La passes.

The only one of these (B. 11) with which we are acquainted is the Dempo La, on the road from Dewangiri to the Monass. There is also a pass (8) on the road between Bengbaree and Tassgong, and there must be a pass which is a good deal used between Tassgong and Towang and Towang and Thibet. Passes over the eastern-most range.

D.—DEFILES TO THE INTERIOR.

I do not think that any of these passes are at all likely at any time to be held by the Bhuteahs, and indeed I should imagine that they were not at all good defensible positions.

It is different with defiles, which are the very places that the Bhuteahs would attempt to defend. These of course, in a country of such numerous torrents and narrow confined valleys, are of great number, and almost every route in the country will present one or two of them. This will be found in those routes or part of routes which lie along the banks of the rivers ; and as a perusal of the routes will show where such defiles may be expected, I shall not say anything more regarding them here.

I will now speak of the passes and defiles which form the entrances into Bhutan from the plain country to the south, which are known as the Dooars, a word meaning gate. Passes and defiles into Bhutan from the plains.

I am not aware that there is any defile into the hills by the gorge of the Teesta,—I should imagine most probably not ; for however practicable it may seem to enter the hills by such a gorge, experience, I think, goes rather to show that the worst place to commence seeking for a line of road in Bhutan is at the narrow, precipitous exit of a large stream ; for here it is certain that there will be presented along the line of the river numerous places where the sides hang over the foaming torrent below by rocky precipices, to cut a road through which must be a work of labour and expense ; and even when such a road was made, the innumerable torrents which feed the larger stream would render it very difficult to keep in repair. Defile of the Teesta.

The first pass, then, into the hills of which much is known, or at all events of which much use is made, is that by the gorge of the Tsel river to Dalingkot. The old road through this defile followed generally the line of the Tsel river, ascending gradually, but descending now and again to cross and recross this stream by very difficult fords, even in the cold season. This defile, in the hands of an enemy who would take possession of the precipitous cliffs on either side, and who would take advantage of its direction, might well be rendered impregnable to a front attack, but it would either be turned by the spur on which the fort of Dalingkot stands or by the old road to Tsakam : in fact there could be no difficulty in this whatever. Daling Pass.

Sipchoo Pass.

The next main entrance into the hills is that by the gorge of the Dechu to Sipchoo, the first Bhuteah village within the hills in this direction. The road runs along the left bank of the Dechu to the foot of the hills, when it ascends a thickly wooded spur by a gentle gradient for six miles into Sipchoo. This is less capable of defence than other passes.

Nagoh defile.

The defile of Nagoh, which is the commencement of the Chamoorchee route into Bhutan, follows the bed of the Pyemchu through a narrow gorge confined on both sides by precipitous heights thickly wooded. In some places this defile is so confined that not more than two men can go abreast; in others it is more open, but everywhere it offers the most wonderful facilities for defence. It is without exception the strongest defile I have ever seen. I have been five miles into the Khyber, and up to that point it is infinitely more practicable than the defile of Nagoh. Of course like all defiles it can be turned; but to do this effectually a very long detour is necessary along the spur on one of the ramifications of which Chamoorchee stands. The Bhuteahs had not the heart to defend even this against General Tytler's force in March 1865.

Nijbaree Pass.

The next defile is known as that of Nijbaree. It was by this that the left turning column of General Tytler's force turned the right flank of the Bhuteahs and took their strongly stockaded position of Bala. This defile enters the hills in front of the village of Santarabaree; thence a tract leads through dense jungle to a depression in the spur known as the "Lime Stone Hill" (round which the Toorsa has its exit), which it ascends and then descends again into a narrow defile bounded on either flank by densely clothed heights. It follows this till the stream of which the defile forms the bed joins the river Toorsa, which the path then crosses by a very difficult and scarcely practicable ford and ascends the spur on which Bala is situated, and eventually reaches a height which overlooks that position at a distance of some 800 yards. It is to be noted that, notwithstanding the apparently short distance, the column above alluded to took 12 hours to accomplish it.

Bala Pass.

The Bala Pass is the next, and it consists of an ascent and descent over the spur above mentioned. The approach to this up the bed of the Toorsa is very difficult by reason of its being commanded on the left flank by the precipitous "Lime Stone Hill," and because the river Toorsa here splits into two branches, both of which are unfordable. The ascent also up the hill is very steep and precipitous, a height of some 1,800 feet being reached in scarcely more than that number of yards. A determined and judicious defence could make this pass impregnable to a front attack; but in regard to being turned, it fares no better—in fact much worse—than the generality of other passes; for either by the Nijbaree on the right, or the Jaigaon (about to be described) on its left, it could be turned and a force could, if necessary, by either of these routes be placed completely in command of every line of retreat from it.

Jaigaon Pass.

Opposite to the village of Jaigaon is a pass which I shall call Jaigaon Pass. The path leads from this due north to the hills, whence it mounts a spur and reaches the ridge on which Bala stands to the east of that place. There is also a path which leads to the bed of the Penchu, and would place a force in rear of the Bala Pass altogether. The Bhuteahs used this pass to turn Colonel Watson's position in the bed of the river.

Garopara Pass.

A path also leads from the village of Garopara, about half way between Bala and Buxa, and on reaching the hills ascends a spur to the north of the village, whence it leads to the range which forms the water-shed of the

Tchinchu. This is a mere track, yet a most important one; for by means of it a light column can advance from the plains and get in rear of every position which the Bhuteahs could take up for twenty-five miles on the Punakha road, including Buxa, Tapsee, and Murichom. I believe there is another path which enters the hills to the north of Nutlabaree, and which also leads to the main range above Buxa. Nutlabaree Pass.

The pass of Buxa may be said to begin from Santarabaree, whence the road winds up the sides of a precipitous spur. Owing to the ease with which the sides of this spur could be scarped, and to the commanding heights which flank it, this pass might be defended by 50 men against the front attack of a much larger number. But the bed of the Zangtee affords means of turning it on the left, and that of the Deema on the right. Buxa Pass.

I do not think that there is any pass into the hills by the gorge of the Tchinchu. Having made very careful inquiries on the subject, I think this opinion can be relied on. There is, however, a path which leads up a spur which is terminated by the Zangtee nuddee, and which eventually leads to Buxa. But in the event of necessity I would recommend that inquiries be made by way of Sanker Mookh Chang, said to be situated on the Tchinchu. Defile by the Tchinchu. Sanker Mookh Chang.

The Beeagoo Dooar or pass enters the hills by a gorge of the Pochu, along whose right banks it goes through a valley bounded by hills; it then crosses a low spur which protrudes from the west, and thence to Tagana. This defile is also very strong indeed. I am not aware of any paths by which it could be turned, but they doubtless exist. Beeagoo Pass.

The entrance into the hills by the Reepoo Dooar leads over a low spur, round which the Sancos runs. The ascent is described as steep, and the descent on the other side to the Sancos as remarkably so. This pass also leads to Tagana, the Sancos being here crossed by a basket bridge. Reepoo Pass.

The Bishan Singh Pass is one of the main entrances into the country, and commences at Poki Haga. It crosses over a low spur first and then descends to the bed of the Laroong, or the Saral-bhanga. Bishan Sing Pass.

Between Bishan Sing and Bagh Dooar lies an unexplored country, which is very difficult to explore by reason of its totally uninhabited state and the peculiarly dense nature of its jungles. The story of General Mulcaster's having to cut his way step by step when trying to go direct from Bijnee to Bishan is well known; and Mr. Nicholson, who was engaged during the cold weather of 1866 to survey the courses of the larger rivers in the eastern Dooars, told me that the only way he could get to the exit of either the Champamuttee or the Aie was to go up their beds. There may then be passes into the hills between the abovementioned places, but I think it is very unlikely; or if there are, they are probably unfrequented, and lead to no place of importance. Mr. Nicholson told me he was at great pains to discover any signs of a road by the gorge of either the Champamuttee or the Aie, but could not do so. Of passes between Bishan Sing and Bagh Dooar.

The Bagh Dooar, then, is next to be considered. It commences from the right bank of the Monass, which here has its exit, and runs in a westerly direction along a spur overhanging that river for a short distance, when it descends towards the river and turns in an easterly direction, following the banks. If Bagh Dooar was held by the enemy and the most was made of its defence, it would be necessary to operate by both banks of the Monass, as a column could not get past one or the other. If the opposite side was held, a column could, however, ascend the hills above Mattalgooree on the left bank and turn an enemy's position taken up on that bank, with a view of stopping the passage of Bagh Dooar. Bagh Dooar.

Koklabaree, Agrabaree, Battabaree passes.

Between Bagh Dooar and the Soobankotta Pass there are three passes which lead into the hills, which are of great importance. These are opposite the villages of Koklabaree, Agrabaree, and Battabaree, and they all lead to the village of Nietola, which is situated on the southern water-shed of the Monass, which is a continuation of the same ridge on which Saleeka and Kerigenpa are situated. From this village an unencumbered column, or even one with lightly laden coolies, can (1) get in rear of the position of Dewangiri ; (2) turn the Dangmesam, or the iron chain bridge over the Monass, effecting a passage of that river at or near Pieksao ; (3) turn any position an enemy may have taken up to block the Bagh Dooar defile, and seize their line of communications.

Dewangiri passes.

We now come to the Dewangiri passes, which are five in number, and all of which lead by converging lines on the position of Dewangiri. The passes are, first, the Soobankotta, which enters the hills by the gorge of the Deea nuddee and is the westernmost pass of all. The path, after entering the hills, runs along the bed of the stream, and then, striking a spur, ascends steeply to the hills to the west of Dewangiri, whence it reaches that place. The next is the Lebra, also for the first part up the bed of a stream, and then taking to a spur and ascending steeply to Dewangiri. The most direct of all is the Durangah, which is the centremost and leads in the same manner. The others are Matungah or Goroogaon and the Baldeea, which enter the hills also by gorges of small streams, and ascending, make a long sweep round by the village of Meeroo and enter Dewangiri from the east. All these passes are in themselves defensible in the highest degree, but they are too numerous and widely diffused. To hold them effectually would require a larger force than the Bhuteahs could possibly bring to defend them ; while even supposing that all could be held, it must be remembered that the existence of the Bagh Dooar, Koklabaree, Agrabaree, and Battabaree passes to the west, and probably also others to the east, would render the firmest hold on them ineffectual.

Deochang Pass.

The only other pass which remains is that by the gorge of the Bor nuddee, called Deopang or Deochang. It leaves the hills by the left bank of the above river, and is said to be much frequented. The passes which exist to the east of these are not frequented by the subjects of Bhutan Proper, and cannot therefore be included in this report.

Summary.

With this pass, which is the last which leads into the hills of Bhutan Proper, I shall conclude this subject, merely observing that I do not suppose for one instant that in the above enumeration of the known passes and defiles between the Teesta and Bor nuddee I have included all that actually exist ; on the contrary I imagine that an enterprising officer could find paths up most of the spurs. But to give all these, even if I knew of more, would be tedious, and I consider that this, and the more minute details with which it is necessary that an officer conducting an operation against any of these passes should be provided, more properly belong to the intelligence officers on the spot.

E.—THE RIVERS OF BHUTAN.

Before entering upon the description of the rivers of Bhutan, it is well that I should offer a few remarks on their general character. All the rivers of Bhutan partake in the most marked manner of the nature of mountain torrents, being immured between high rocky mountains, which usually end

abruptly in stupendous precipices and confine the water in a narrow space; and, moreover, as the gradient of their beds has generally a very marked fall, they all rush with irresistible fury over beds of huge boulders and enormous rocks. It is therefore evident that none of them are navigable at any part of their course in the mountains; and indeed so fierce is their current, that it is not for several miles after their entry into the plains that they become sufficiently tranquil to admit of navigation. With regard to the fords, in the absence of correct information thereon, I may give as a general, and I think a very safe rule, that in Bhutan none except the merest rivulets are anywhere fordable in the rains. And it may also be taken as a rule, that wherever paths of the least importance cross streams, there will always be found some sort of bridge; and though of course such bridges are always easy of demolition, it is something to know that the Bhuteahs are very excellent judges of the best points of the passage of rivers: and secondly, if the bridges are destroyed, that abundance of the same material with which they were constructed will certainly be at hand. A further reference, however, to the section "Bridges" will give all information on this point. The very confined nature of all the beds of the streams will at once suggest the impossibility of any of them ever being made use of as a line of operation for an army, yet there is no doubt that the smaller streams of Bhutan will be found to afford facilities for the execution of turning operations by lightly equipped columns.

The first river met with is the Teesta, but I will not in this place describe it, as it belongs more properly to Sikkim, a country on which I have also to report hereafter. This river formed a very excellent boundary between Bhutan and British Sikkim, being unfordable everywhere.

Dalingchu.—This river takes its rise in the heights above Dalingkot, its principal sources being in the Rhishi Peak. It then rushes through a precipitous ravine in a south-west direction, till just below Ambiokh it is joined by another large feeder. On entering the plains it takes the names of Tsel, and it eventually falls into the Nartee. In the dry weather it is fordable with difficulty by the old road to Dalingkot, but in the rains it cannot be anywhere fordable.

Narchu.—This river has also a very short course in the mountains, taking its rise in the slope of the Retsela. In the plains it takes the name of the Nowra, and eventually, after receiving the Tsel on its right bank, empties itself into the Teesta at Dhomohonee.

Dechu—Is said to take its rise in the Beetang-tso, a large lake near the Giepmochi. It takes a nearly due southerly course, and receives soon after its source several considerable feeders on both banks, the largest of which is the Chonechu, which rises to the east of the Giepmochi. At about twenty miles from its source it was crossed by Captain Austen in going to Pango La, who describes it as a fair sized stream unfordable in the rains.

It then runs on for another ten miles, receiving fresh accessions from the spurs of the Toole La on its left and of the Retse La on its right to the point where the Daling and Sipchu road crosses it. Eden describes it at this point as being "a deep, swift river, the bed of considerable breadth, and not fordable and impassable in the rains." As this is also the point at which it leaves the hills, I leave it.

Am-Mochu—Is one of the principal rivers in Bhutan, and takes its rise in the Chumulari ridge. Its total course from this point to where it issues into the plains at Bala cannot be less than 160 miles, of which some 70 miles are in Thibetan territory, where it waters the valley of Phari, passing by

that place and by Chumbi and Rinchingaon, between which places it is crossed by numerous bridges communicating with the valleys on either bank. At Chumbi it is described by a native of Sikkim, who has been there several times, as a deep and swift river, some 40 yards broad; thence it continues flowing south for some 15 miles, when it first enters Bhutan territory, and being confined between high precipitous and rocky banks, it rushes past with great fury. It then flows on, and a mile or two above the point where it is crossed by the road from Dalingkot it gives a turn to the east. It is here crossed by a bridge, which is described as a compound of a suspension and pier bridge; and Eden informs us that it is here "a very beautiful river, deep, very rapid, and broad, full of enormous boulders, which makes it one continuous line of white sparkling foam." Its height at this point is 3,849 feet, and it runs through a beautiful small valley, receiving on its left, a short way down, the Sukchu, a small torrent, and immediately afterwards the Sechu. From this last point it changes its direction south-east and continues rushing impetuously on, enclosed again between high precipitous cliffs, and receiving at some 20 miles the Somchu—its first considerable feeder, and which rises in the Tegong La. Some seven miles beyond it is crossed by a bridge on the main road from Paro to Chamoorchee; thence its course becomes still more southerly, till just before reaching Bala it turns once more due east. At this point it takes the name of the Toorsa, and is even in dry weather a fierce, swift river, having an average depth of not less than four feet, and being fordable only with very great difficulty. Just where it takes its last turn to the east in the mountains it is joined by the Penchu, a large mountain stream rising in the Loome La.

Tchinchu.—The source of this river lies in the eastern and southern slopes of the Chumulari Mountain. It is said that there are two streams of about equal size, which form its source, one of which rises in a lake called Yale-tso, the other more to the eastward. The total course of this river cannot be less than 210 miles in Bhutan. By its banks one of the main routes to Thibet lies, and it is said to be even there a very swift stream. At Tasichozong Turner makes no mention of it, but as it is bridged, we may conclude that it is not at this point fordable. At Oolaka, where it was first met both by Eden and Pemberton, it is said to be a very impetuous stream, running over a bed of large boulders. Between Tasichozong and Panga the banks are not so confined, but after leaving this place it is confined throughout the whole of the rest of its course to the plains between the most steep and precipitous limestone cliffs. Some four miles above Panga it is joined by the Parchu, a large stream, and nearly opposite Chapcha by the Harchu on the right and the Tama Toom on the left. At Chuka its waters have been very skilfully confined by embankments, but even then the channel is not under 100 feet. Thence it continues on still through the same confined ravine, and it is then joined by the Zateechu, a very fierce little stream, rising in the Sojeah La at Murichom; and indeed the whole of the way to the plains this character is maintained. Below Tapsee it is turned to the east by a long spur of the Taga La range, and it does not again resume its southerly course till its exit into the plains, at which point it is joined by the Oomachu. I am not aware that this river is anywhere fordable, though Pemberton thinks that it is probably so. There are bridges over it at Parsang, Tassisudon, Oolaka, Tselumorphi, Simoo, Doga, Durbee, Chuka, and Murichom. Its bed throughout is formed of enormous boulders. At Tassichozong the height of this river is 7,271 feet above the sea, and at Sunkermookh, the point of its exit, it is probably not more

than 300 feet. The cause of the extremely impetuous nature of its current is therefore evident.

Pochu Mochu.—The source of this river is said to be in Thibet, beyond the snow-capped mountain peaks above Gasse. Its course at first has a direction of south-east, but on reaching Punakha it turns more south, and does not again materially alter this direction till reaching the plains. Its total course in Bhutan must be about 180 miles. At Punakha it is joined on the left by the Pochu, an unfordable stream, and twelve miles further down by the Tanchu, also a large stream. From this point little or nothing is known of its course, but I have given that direction to it in the accompanying map which I believe will be found pretty nearly correct, founding my belief on careful inquiries from the Bhuteahs who have been along both banks of it. Kishen Mant Bose, the Bengalee, who went up the Cheerung route to Punakha, might have given valuable information, but all he says regarding it is very vague. This river is joined on both banks by several mountain streams, the drainage of the range on either hand. On the right it receives the Pesochu, Kamgachu, Sonechu, and Tagachu, and on the left the Biameshochu, Piarechu, Kissonachu, Harachu, Mazachu, and Hateechu. Turner states that after its junction with the Tanchu it takes the name of Chanchu; and Lieutenant Strahan, who was surveying in its vicinity, heard the same name given to it in the hills. At its exit into the plains at Beagoo Dooar, it is a deep river, running noisily over a bed of boulders. The current of this river is said not to be very swift, and its waters are famed throughout Bhutan for their excellent quality.

Mateechu.—Pemberton states he was informed that the source of this river was in Thibet from a lake called Ango; and I think this is more than probable, as it tallies very nearly with the position of the large lake, Yamdo Yeumtso, which is known to exist. Beyond this conjecture nothing can be said of its course till it reaches Tongsoo. Here the bed of the river is 5,417 feet, and it is quite unfordable and runs along very swiftly. Beyond this the course of this river is buried in mystery. There are several conjectures regarding it, the first of which is that of Pemberton, who is of opinion that it is the same as the Champamuttee; the next, which was, I believe, first advanced by Mr. Geddes, Deputy Commissioner of the Eastern Dooars, is that it is the same as the Aie; and the last is that which I advance, namely that it has no exit into the plains at all as a separate river, but joins the Monass before leaving the hills. As to the first, I think we may safely regard it as untenable. Not a single person I have conversed with who *had seen* the Champamutee ever attempted to uphold this opinion; the Champamuttee being a small insignificant stream where it comes out of the hills, sluggish, the water being hot, and with no appearance from having come from the snows. The opinion that it is the same as the Aie admits of more argument, that being a larger stream; but this is also said by Mr. Nicholson to be a sluggish stream and easily fordable at its exit from the hills, and it is certainly fordable in the Dooars lower down than any of the streams known to come from the snows; and it has not the cold feel which the rivers, and only the rivers that come from the snow, have. I found my opinion that it joins the Monass before leaving the hills on strong circumstantial evidence. First, Dr. Griffiths distinctly states that after leaving Tonga and winding along the banks of the river "Bagh Dooar was visible." Now, if he means that he saw the house at Bagh Dooar, or even the spur on which it was situated, I know this is impossible; but without disbelieving the assertion altogether, or blindly believing it, I think he may mean that he saw the plains at Bagh Dooar; that is, looking

along the valley of the Mateechu, he could see the plains through the gorge near Bagh Dooar. This is quite possible—in fact, it is probable. Second, all the Bhuteahs whom I questioned regarding the Bagh Dooar route positively asserted that it lay throughout its whole length along the banks of the Mateechu. Third, when at Bagh Dooar, very anxious to ascertain this point, I climbed the hills, and thereat, from 10 to 20 miles off along the valley of the Monass, I saw appearances as of a large river entering it on the left. Therefore till it is proved by ocular demonstration to be otherwise, I shall believe my theory to be the correct one. The only affluent of any size that I know it receives is the Moorchangfoo, on its left bank. It is crossed twice by bridges on the road to Bagh Dooar, and it is said not to be fordable anywhere. As its height at Tongsa is 5,417 feet, and at the point where it joins the Monass it cannot be above 400 feet, it is probable that it has throughout a very strong, swift current.

Dangmechu.—The Monass, for which this is the Bhuteah name, most probably takes its rise* beyond the snowy peaks in Thibet, and runs with a direction generally north-east to south-west, thus changing the general direction of most of the Bhutan rivers, which is from north-west to south-east. Just before reaching Tassgaon it is joined by the Kolochu, a considerable stream rising in the snowy range beyond, and along whose banks lies one of the principal routes to Thibet from Eastern Bhutan. At Tassgaon this river is "about 60 yards in breadth, and its waters rush with irresistible fury and a loud noise over a bed composed of boulders and high inclined strata of gneiss." Pemberton, who appears to have been much struck with the course of this river, states "its length from Tassgaon to Jogigopa may be roughly estimated at 121 miles; and as the level part of the plains is about 148 feet and that of its bed below Tassgaon 1,900, making a difference of 1,752 feet, which gives a fall in the bed of 14½ feet per mile, this at once accounts for the extreme violence of the current." He also states "that the inhabitants of this part of the country, through which the Monass runs, in speaking of it, invariably allude first to the extreme violence of its stream, which they represent as being impracticable for even light canoes a very short distance within the lower range of hills." Continuing its course from Tassgaon it is joined by the Sheereechu, a small stream on its right, then by the Demrichu on its left. At this point it is crossed by an iron chain suspension bridge having a span of 303 feet, the river being here deep and swift. Some miles below this it is joined by the Kooroochu, a large hill stream rising in the snow, and a few miles further by the Mateechu. It then enters the plains at Bagh Dooar, being here 150 yards in width, and even in the cold weather with an average depth of six or eight feet with a very fierce current.

* Vide note at the end of Mountain ranges.

Harchu.—Rises in the Chumulari range and flows south-east as far as Hartumphiong, where it is described by Eden as "a very clear stream about 60 yards broad, creeping sluggishly along, and having a very different appearance to the boisterous torrents we had hitherto crossed." Thence it flows south through a valley presenting lovely park-like scenery to Dorkha, where it is joined by the Dorechu, its largest affluent. Here it again turns south-east, and, flowing between the slopes of the Dole La and Lele La, it joins the Tchinchu nearly opposite Chapcha.

Parchu.—This river also rises in the snowy range above the Piem La, the direction of which is south-east, flowing through a comparatively open valley, but is a perfect torrent, foaming violently along among huge masses of stone that obstruct its course, and augmented by many streams flowing from the mountains on the right and left. Just above the palace

of Paro it receives a very considerable feeder on its left, the Dochu, the impetuous rush of water caused by the junction of the two streams having necessitated the construction of an embankment, which is said to be a very excellent and ingenious piece of workmanship. The rest of the course of this river is through a beautiful valley to its junction with the Tchinchu just above Panga, where it "contributes a volume of water very little inferior to that of the other."

Pochu—Rises in the snowy mountains north of Punakha, and thence its course is south-west to its junction with the Mochu. Very little is known of this river, and those officers of the missions who have seen it are singularly silent on the subject. At its junction with the Mochu it is fordable, and probably not much smaller. Pochu.

Tanchu—Is said to rise in the Mamse La Mountain to the north-east of Punakha and the north-west of Tonga. Its course is south-west, and it empties itself into the Pochu Mochu at Angdophorung, forming the southern boundary of the hill on which that fortress is built. Tanchu.

Penchu—Rises in the slopes of the Lome La and flows due south to the hill on which Tassagaon is situated, whence, giving a turn to the west, it joins the Mochu at the foot of this hill. It is a stream of some width, and, running close under Doona, is also known as the Doonchu. It is crossed by numerous wooden bridges in this valley. Penchu.

Koroochu—Is a very considerable river rising in the snowy mountains to the north of Sinchee; it has a direction generally south to its junction with the Monass. The first point at which we have any information of it is at Sinchee, where it was crossed by a bridge by Pemberton on his way to Tonga. The height of its bed at this point is 3,045 feet. Thence it runs south to the point where the lower road to Tongsa crosses it by a wooden bridge. It is here unfordable. The direction given to this river has been very carefully put in from the results of cross-questioning Bhuteahs. Koroochu.

Moorchangfoo.—This is called by Pemberton the Samkachoo, and is given in the maps as the Samkat river, and also Tangchoo. It is made to join the Monass about the point where the Koroochu really joins it. I believe the course I have given it will be found much nearer the truth. My Bhuteah informants told me (*1st*) that the river at Biyagur was called the Moorchangfoo, and that Samkat or Chamkat was the name of the village on its banks; (*2ndly*) they said that the same river was crossed between Oora and Giesa; (*3rdly*) and also between Jongar and Jemagaon; and (*4thly*) that it ran into the Mateechu *just above* where the road to Bagh Dooar *crosses the latter* river. Moorchangfoochu.

Kolochu—Rises in the snow also, and after a nearly southerly course throughout falls into the Monass, one march from Tassgaon. Pemberton's mission crossed it, and marched along its banks for some way to Tassangsee, where it is described as "of considerable size and not fordable, and only to be crossed by a bridge." Its bed at Tassangsee is 2,430 feet high. At the point of its junction with the Monass it is said to be "a considerable torrent." Kolochu.

There are other streams in Bhutan, but they are all minor ones; nevertheless I would have it borne in mind that no streams in Bhutan can be reckoned on as being fordable for an hour together in the rains.

F.—THE VALLEYS OF BHUTAN.

In a former section of this report I have remarked that the mountains of Bhutan are of a most rugged and precipitous nature, and it may therefrom be inferred that in such a country the valleys would be of small

number and extent; and such is actually the case, for there is nothing deserving the name of valleys throughout the length and breadth of the country. A few mountain vales or glens there are, but even these are few and confined.

Hah Valley. The first valley of any importance which claims attention is that of the Harchu. Eden describes it as "a very lovely valley, intersected by the Harchu, surrounded on all sides by snowy peaks covered with grass and dotted with pines." The centre only of this valley for about quarter of a mile is described as being flat with some fine villages scattered about in it, and with a good deal of cultivation in the terrace style. It is one of the most fertile and well populated in Bhutan, and the inhabitants are said to be more independent in their bearing, owing perhaps to the extreme facility with which they could flit into Thibet if too much oppressed. The elevation of this valley is 9,000 feet, and snow falling in winter, many of the inhabitants remove to the more genial climate of the outer ranges. It is about two or three miles broad, and would make an excellent sanatarium in all probability.

Paro Valley. The valley of Paro is computed to be about three miles long by two miles broad, lying nearly north-west and south-east, and intersected by the Parchu, which winds in an irregular course through it. "The centre of the valley in which the fort is situated is a perfectly level plain, composed of land capable of producing great quantities of wheat and rice. The lower and level portion of the valley is richly cultivated with rice, which is here procurable in considerable quantities at Rs. 2 per maund, while the higher portion grows a very fine full grained wheat and barley." Eden mentions having ridden down this valley to the junction of the Parchu with the Tchinchu, and describes it as nearly a perfect level up to this point,—"The sides of the river being composed of beautiful grass sward, with an avenue of weeping willows, both sides of the river being prettily studded with houses belonging to the officials of the fort."

There are said to be some 600 or 700 houses of three stories high, and the inhabitants are said to be contented, having numerous herds of cattle. The elevation of this valley is 7,741, and in winter the cold is very great. Snow lies on the ground, and it is exposed to fierce northerly breezes from Thibet. The inhabitants send their cattle down from Paro to the lower ranges during the winter months.

Tasichozong Valley. The valley of Tasichozong is about three miles in length by one mile in breadth, lying north and south, with the Tchinchu running through it. It is said to be in a high state of cultivation, diversified by clusters of houses. Turner says, "Numerous single houses and monasteries are scattered about, having orchards and waving corn-fields attached to them, forming in themselves picturesque accompaniments to this fine and romantic valley." He adds that "this valley is rather what may be termed a softened glen lying between vast mountains that give passage to the Tchinchu. These hills have a very easy slope at their bases, thus forming a bank of the richest soil, which yields luxuriant crops of rice, which, in default of rain, all the springs of the surrounding mountains are artificially conducted to fertilize." There is no town in this valley, but a few houses are scattered about in romantic places. The exact elevation of this valley is not known, though from the fact of its forming the summer residence of the court of Bhutan it is probable that it is of considerable height; indeed Turner describes the valley as possessing a most temperate climate, admitting of going out of doors all day in July. However, as we know that the elevation of Oolaka, a few miles down the Tchinchu, is 7,271 feet, it may be assumed that Tasichozong is somewhat higher.

The valley of Punakha is described as being of "uneven width," the mountains bounding it, however, having an easy slope, and their "sides being terraced for the growth of corn and not encumbered with trees." It is said by Turner, who, I am afraid, painted every thing Bhuteah in the brightest of colours, "to be as level as a bowling green, with as fresh a verdure, the banks of the river being lined with an avenue of fine old trees. Eden, however, does not speak so highly of the beauty and fertility of this valley, the trees mentioned by Turner having been indiscriminately cut down for firewood. Griffiths says that its existence is only owing to the vagaries of the river-bed, the only level part having evidently at one time formed part of its bed. Pemberton gives the height of this valley at 3,739 feet, while Austen made it 4,534. All authorities are, however, agreed as to the heat of the valley in the daytime; in summer the power of the sun being as great as that of the plains, and the thermometer having a range of no less than 40 degrees between day and night. A good deal of rice is cultivated in this valley, and, as in the Paro valley, there is said to be strong evidences of iron in the soil. Punakha Valley.

These three valleys are the only others worthy of notice. They are all situated in the east of Bhutan, and are amongst the highest in the world, being situated at elevations respectively of 8,668, 8,149, and 9,410 feet; they consist merely of gentle slopes of the mountains to the banks of the impetuous torrents that wind through them, and afford means of cultivation by means of terraces. There is a considerable quantity of corn grown in them (wheat and barley), the whole vegetation being that of a cold climate—pines, firs, and willows growing in them. Snow falls, but does not lie; and notwithstanding their height, the heat is said to be great in the middle of the day. Lingett. Boomdangtang Beyaga.

In addition to these, which are the largest valleys in Bhutan, there are numerous smaller ones, in which the space is more confined, but which nevertheless afford ample ground for cultivation. Among these may be ranked the valleys of Sangbi, Sipchoo, Doona, Dojezong, Gedoo, and others, while there are numerous other spots in Bhutan where the hills, by giving a more gradual slope, afford facilities for cultivation by means of terraces.

G.—ROUTES AND ROADS OF BHUTAN.

To come now to that most important point in all mountainous countries, a consideration of the routes, roads, and paths which exist, I beg to offer the result of my inquiries on the subject; and as in giving an account of a road it is not only necessary to make it as detailed and accurate as possible, but also to show what degree of reliance may be placed on the account given, I may state that all the routes which follow are made out from a very careful comparison of all the information published on the subject, and of the testimony of, I may say, hundreds and hundreds of Bhuteahs who have travelled them. During the time I had the honor and pleasure to be attached to the Bhutan Field Force, both at Buxa and Dewangiri, not a Bhuteah was permitted to pass by without giving all the information regarding Bhutan which persuasion, rupees, or rum, could induce him to impart. In this manner I was enabled to take down numerous accounts of all the principal routes from different men who had had no collusion whatever with each other. These means, with the practical knowledge of the nature of the country which I possessed, enabled me to compile these routes, which, I hope, any expedition again entering the

country will find fairly correct and useful. I had not, however, been long questioning the Bhuteahs before I found it necessary to change very much my mode of address—questions which might have suited the understanding of a European, or even a Hindoostani, were quite unadapted to, and beyond the comprehension of, the Bhuteah. Questions which my previous too theoretical knowledge of mountains induced me to put were rewarded with a look of the blankest astonishment, and even when to elicit my meaning I resorted to similes which would have been perfectly intelligible to natives of India, my informants regarded me with a half-puzzled, half-smiling air. Thus blundering on, I learnt in time to adapt my questions to the comprehension of the people and to the peculiar idiom of their language, and there is one fact to which I would call attention, viz. that it is not the slightest use attempting to get a word of information out of a Bhuteah if he is questioned in his village or in the presence of others than his immediate relations. This reticence on these occasions arises simply from the fear of its being reported to their superiors, the Zongpes and others, and being used as a cause for oppression. To this fact alone can I attribute the singular want of all topographical information of Bhutan which exists in the reports of all the various missions. It is probable that the officers forming them were continually watched, and consequently never had access to those Bhuteahs who really could give them important information, and who are here, as in other countries, the traders, herdsmen, wandering mendicants, and villagers, and not the hangers-on of great men. I remember a circumstance which, as it illustrates this fact, I will here relate. On one occasion I wished to find out the existence of a road, which I more than suspected, and asked a Bhuteah who had been making himself very friendly if he knew of it; but I did not notice that we were surrounded by several Bhuteahs, amongst whom were two Zinkaffs. Immediately on hearing my question the man's dirty face, which had before been wreathed in smiles (at the prospect of rum), grew suddenly long, and he answered most positively that he knew all the country around well, and that there was no road there,—nothing but jungle; and despite all I could say he stuck to this assertion. Shortly afterwards I found the road myself, and meeting the same Bhuteah alone one day I asked him why he had said there was no road, since I had been to see it myself. On hearing my question he looked cautiously round, and seeing that except my interpreter we were quite alone, he burst out laughing, and, drawing his finger significantly across his throat, said "When you asked me there were two Zinkaffs of the Penlow there: of course I knew nothing then." However on my again asking him about this road, he at once gave me a very full, and, as I afterwards found, a very correct account of it, saying he knew every step of it, having travelled it since childhood. But to return. If it is wished to get anything out of a Bhuteah, the inquirer must divest himself of the European ideas and idiom which he would use on a similar occasion, and having given his Bhuteah traitor a lot of rum with a promise of more, and rupees, according to his information, begin. In questioning regarding distances, the answer must not be expected in *kos*, miles, or even hours. The Bhuteahs generally say that such and such a place is distant from another a day's, half day's, or generally of a quarter day's journey, for a messenger express, an unencumbered man, or a laden coolie: mark the difference. It is absurd to hope to arrive at the heights of the place by any account which a Bhuteah can give, and the roughest approximates are all that can be expected. In speaking of heights of passes, it is best to ascertain the amount and duration of the snow on them, and it will aid if I here state that it is enough for general purposes to know that, first, passes ranging

from 14,000 to 18,000 feet are usually covered with snow from November till April and are shut half of that time; second, passes varying from 11,000 to 13,000 have snow on them during this period, but they are very seldom shut, except in a few days in January and February, after a heavy storm; third, passes ranging from 8,000 to 11,000—snow falls, but does not lie, except for a few days in January and February, after a heavy storm. Snow does not lie below 8,000, though it occasionally falls as low as 6,000 or even 5,000. With regard to inquiring about the practicability of a road for laden animals, I would remark that throughout its whole length there is not a road in Bhutan that can be called so, except for sheep and the diminutive donkeys they use, and the Bhuteahs very seldom use even them; men who accompany the few laden animals that are seen being nearly always Thibetans. But if they do not lade them, they ride them; and it is a very good way of finding out if a narrow path or a steep ascent is practicable for a laden animal to ask if they ride it over it. If they do not, it may be taken for granted that this spot is not practicable, though it is by no means equally certain that if they do it is so. In inquiring of a river, it is of course easy enough to ask if it is bridged. To a tyro to say a river in Bhutan was bridged would not be to give any idea of its width; nor, if a description of the bridge was added, would it help much, yet I think a reference to the section "Bridges" will aid in this point. It must be noted that the terms 'practicable' and 'impracticable' apply only to laden animals:—

Chamoorchee to Hah. 1.

SABEEGONG.—First stage nine miles, generally north-east.

This road, immediately on leaving, commences descending gradually for one-half, then steeply for one mile to the bed of the Pyemchu. It then continues along the bed of the river for three and a half miles, when there is a steep ascent up to Sabeegong. Water scarce, from small springs.

N.B.—In going from the village of Ambari it is not necessary to go up to Chamoorchee, to which there is a very steep ascent, but it is better to make straight for the gorge of the Pyemchu, about eight miles north-east. The position of the Bhuteah fort at Nagola, on a precipitous hill overhanging the river, is passed on this march.

THLOBI.—2; eight miles north-east.

From Sabeegong there is a steady and severe ascent, till the ridge is reached at the Lewa La Pass, when the descent begins and continues to Thlobi, which is a place in the jungle. Water good, from the head of a small stream.

DONCHEKA.—Sixteen miles, north-north-east.

A long day's work; descent steeply at first for seven miles, then by a dangerous precipitous path for two miles to a cane suspension bridge over the Am-Mochu; here quite fordable. Then there is a very difficult and impracticable ascent to Doncheka, a small village. Water a good way off below. From the bridge a road to Sangbe, and possibly also to Bala.

SHINKOKA.—Twenty miles nearly north.

A very long day's journey. The road winds round the hills through dense forests, generally ascending gradually the whole way; there is then a descent into Shinkoka, which is a village. Very little water from a spring.

DONKHA.—Twenty miles north.

There is a very gradual ascent for eight miles, then very steep for three miles to the Seli La, a pass on which snow falls deeply in winter; then there is a very steep descent by the bed and along the banks of the Kaza Loom for four miles; thence the descent is gradual, and approaching it is pretty level; a village; water from Harchu.

HAH.—*Vide* route No. 20.

This route is used by the people of the Hah valley in going to the plains and to send their cattle down to graze. It is the most direct road, and is practicable for a column without laden animals. There is little or no population on the road.

Bala to Paro. 2.

1. DOONA.—20 miles north; a very long day for a coolie; fort; practicable.

From Tassagaon there is a steep descent to the bed of the Menchu river; the path then leads along the banks, crossing from side to side several times by means of wooden bridges for seven miles. There is then an ascent from the river for four miles to the level of Doona, whence the path leads pretty level above the right bank of the Menchu or Doonchu into Doona; water from a stream near the fort. Thence are paths direct to Hah by the Seli La to Chuka, and to Buxa by Dabusa and Gedoo.

2. MANAKA.—Ten miles; an easy day for coolies; north; practicable.

The road leads out level and continues so, ascent being gradual along the right bank of Doonchu for seven miles, when there is a steep descent to the Chu Marn, a small stream fordable; then there is an ascent, steep at first, and then pretty easy for three miles to Manaka; a small village; water plentiful.

3. DOONCHUGO.—Source of Doonchu; seven miles; a very easy march; north; practicable.
Along the right bank of Doonchu, ascending gradually the whole way; practicable for laden animals. There is only a shed in the jungle here.

4. BEDEKA.—(Fort); 15 miles; a long march; north; impracticable.
There is a very steep ascent for five miles to the Loome La Pass, on which snow to three feet falls, but which is never shut; thence descend very steeply for four miles to Kiachi, where there is a rest-house, and then on again very steeply to the Harchu; here a broad unfordable stream, hence a road by Geelegempa and Geemchall to Chuka, also one by Darbee to Tasichozong, cross by wooden lever bridge; then a very severe ascent to Bedezong, a fort belonging to the Doone Soobah; a large village here; water from a spring. Thence paths to Darickha and Durbee.

5 NABESA.—Eight miles north; a fair march; practicable.
An ascent not very severe for four and a half miles to the Dole La Pass, on which snow falls to about three feet; it is never shut; thence for three and a half miles by a steepish descent to Nabesa; village of some size; water from a small stream. Paths thence to Durbee and Doga Sam.

6. PARO.—Ten miles north; practicable; fort; an easy march.
Descent very gradual, scarcely perceptible; road very good; cross one small stream; road thence to Phari, Hah, Doona, Durbee, Simoo, Tasichozong, &c.

REMARKS.—This route is principally used by the people of the Paro valley in communicating with the plains. It is probably one of the best in the country, and is practicable, except in places on the fourth march, for laden animals. It *is the easiest and most direct route through Western Bhutan* to Thibet Phari.

Buxa to Tasichoing. 8.

1. TCHINCHU LA.—Six miles north; an easy march; practicable; 4,869 feet.
On leaving Buxa the ascent is gradual for three-quarters of a mile; it then becomes very severe for one and three-quarters of a mile to the top of the Peachakam Mountain; it then is tolerably level for one mile to the foot of the Oomkoo Mountain, whence the ascent is steep for one and a half miles, but not so bad as the last, to the gorge. The road then winds round the Tchinchu La hill, slightly descending for three-quarters of a mile; water scarce in dry season; no village.

2. TAPSEE.—Nine miles north; an easy march; practicable; 3,003 feet.
The road descending very gradually the whole way, winding round the spurs; no village; an old stockade. Water plentiful from the Chatee Loom.

3. MURICHOM.—Six and a half miles; an easy march; practicable; 3,788 feet.
On leaving cross Chatee Loom, fordable; then by a pretty level path with a few zigzags for one and a half mile to a stream; thence slight ascent, at first followed by level for three miles; to the descent to Beemloom, unfordable; then ascent pretty severe for two miles to Murichom; small village. Not much water at village, but very plentiful below, half a mile from small stream. Thence road to Tagana by Mamfoola, also to Bala and Doona by Gedoo.

4. CHOONKAR.—Nine miles north-north-west; easy march; impracticable.
For four and a half miles the road is level generally; few ascents and descents, but the path is very narrow and overhangs the Tchinchu by tremendous precipices. Just before coming to the Gedoocha there is a path to Gedoo, and on to Bala or Doona; then a steep descent for three-quarters of a mile commences to the Gedoocha, unfordable; then a very steep ascent, followed shortly by another descent to the Padechu; 2,667 feet; unfordable; then an ascent to Choonkar; a few houses and a clearing; water plentiful.

5. CHUKA.—Nine miles north; easy march; impracticable; 4,449 feet; fort.
The road descends to Patteechu; unfordable, which is crossed at its junction with the Tchinchu, and then it comes to the Piah; Pankogem, a gneiss precipice, up which a ledge is cut for three-quartes of a mile. This is very difficult, and could not be improved without immense labour, and is a dangerous place, quite impracticable for laden animals. The road then winds for the rest of the way to the Chuka bridge, along the right bank being good. The river here is unfordable, and the span of the bridge, which is a wooden lever one, is 101 feet. The ascent to Chuka from the river is short, but steep; thence roads to Taga, Doona, and Paro; village; water scarce; *near*.

6. PINAKA.—Eight miles; easy march; impracticable.
From Chuka the road ascends steeply as far as Simaka, whence it continues level, but is very narrow in two places, being on a ledge cut in the rock and overhanging the Tchinchu; it then descends slightly to a small stream and ascends to Pinaka; water scarce; small village.

7. CHAPCHA.—Nine miles north; easy march; impracticable; fort; 7,984 feet.
Ascend slightly at first from Pinaka, then continue level, winding along the sides of the mountains, at eight miles pass Harchu junction and descend to the Tama Loom, unfordable; whence there is a very steep and impracticable ascent up a rocky precipice for a mile to Chapcha; village; water good; thence road to Tagana.

8. PANGA.—Eleven miles north; fair march; 7,511 feet; impracticable.
Ascend at first to the ridge, below which Chapcha is situated, then a very long descent of 3,000 feet to above the river Tchinchu, above which the path then winds. The road is tolerably good, but in two places it is a mere ledge overhanging the river; village; water plentiful; thence roads to Paro, Tagana, Angdophorung, and Durbee.

9. SOMLOO.—Eight miles north-north-east; easy march; practicable.
The road leads along the sides of the mountains, following the river, and at some height above it; the road is good and the country opens out; some villages and cultivation being passed, pass junction of Purchu and Tchinchu; village; water plentiful.

10. OOLAKA.--Ten miles north-east; easy march; practicable; 7,120 feet.

The road is good throughout generally, laying along the bed of the river, and occasionally rising 200 or 300 feet above it. The country opens, and villages and cultivation are seen, the hills here having moderate and easy slopes; village; water plentiful.

11. TASICHOZONG.—Eight miles north-north-west; easy march; practicable; 7,271 feet; fort.
The road still continues very good through the same kind of verdant valley, intersected by the river; fort; residence of the Deb Rajah; water plentiful.

Remarks.—This road is used chiefly by men from the valley of the Timpoo, but also by those from Paro and Punakha. It is said to be one of the most difficult into the country on account of it so frequently overhanging sheer precipices. It is the most direct road to Tasichozong, but is quite impracticable through several of its marches for laden animals.

Beagoo to Tagana. 4.

1ST MARCH.—One day; impracticable; north.
The defile to Beagoo has already been elsewhere described. On leaving Beagoo the road ascends till the ridge on which Beagoo is situated is surrounded; it then descends steeply to a small river, crossed by a rude wooden bridge, immediately ascending again steeply to another ridge. The halting place is in the jungle by a small stream; no village met with.

2. GETANA.—A very long day; impracticable; north.
The road ascends steeply to the top of the ridge, on surmounting which it descends steeply at first, then gradually the whole way to Getana, crossing one or two streams; this is a large village; water plentiful; thence paths to Murichom, Chuka, and Chapcha.

3. TAGANA.—A very long march; probably practicable; east-north-east; fort.
The road descends to an unfordable stream, crossed by a wooden bridge, when there is a long, and at first a very severe, ascent to the Kana La. A little snow occasionally falls on this; there is then a long descent to the Tagachu; unfordable, and crossed by a wooden bridge, whence an ascent of two miles to Tagana, a large village. Head-quarters of the Taga Penlow; thence roads to Murichom, Chuka, Chapcha, Angdophorung, Cheerung. ✓

Remarks.—This route is very little used, and only by people of Taga. It may be safely said to be quite impracticable for laden animals, though I believe ponies are sometimes brought down it. As far as Getana it lies through dense forest and jungle. I do not think there is likely to be much use for it except for a small column sent to punish the Taga Penlow especially; for such, with coolie carriage, it is practicable.

Reepoo to Tagana. 5.

1ST MARCH.—North; a long day; impracticable.
Reepoo is in the plains. On reaching the hills there is an ascent over a low spur, and then a very steep ascent up the ridge of the Jori La, which runs out from the Black Mountain. The halting place is in the jungle, through which the whole of this march runs.

2ND MARCH.—North-north-west; a good march; impracticable.
The road ascends steeply to the top of the ridge, then descends very steeply indeed to the Pochu Mochu, here a very large river and quite unfordable, crossed by a basket bridge or a suspension, which is not practicable for animals. This river is crossed at its junction with a small but unfordable stream, which is probably the Dubleng River or Hateechu.

3RD MARCH, TAGANA.—North-north-west. An easy march; probably practicable; fort.
The road ascends gradually till just before coming to the Tagachu, when it descends; then, after crossing, it ascends for 2 miles to Tagana.

Remarks.—This route is a good deal used by the Bhuteahs in preference to that by Beagoo; it is not practicable for ponies at all on account of the intervenement of the Pochu Mochu, and though it may be more inconvenient for the Bhuteahs, it would not be preferable for a column, on account of the necessity which would exist of making a bridge over the Pochu Mochu, a large river.

Bishan Sing to Punakha. 6. ✓

1. BURRA BHEEL.—Twelve miles north-north-west; practicable; easy march.
The road leads out of Bishan Sing pretty level for 3½ to 4 miles; it then gradually ascends, winding round the face of the hills to the Chota Bheel, a small muddy tank, which is reached in 5 miles more; thence to Burra Bheel the ascent is very gradual; this is a tank in the hills; whole march through dense jungle.

2. DOONLANG.—Twelve miles north-north-west; practicable; easy march.
The road ascends gradually for 3 miles to the top of the Jori La; it is then level for 2½ miles, crossing several small streams; then a short but severe ascent to Chapchukam, whence it descends gradually the whole way to Doonlang. This is merely a clearing; there is no water nearer than the Hateechu, 1 mile below.

3. CHEERUNG.—Ten miles north-north-west; easy march; practicable.
There is a very steep descent into and ascent out of the Hateechu—fordable—which would have to be improved to make it practicable for animals; thence the road is very good, and generally level, winding round small spurs the whole way to Cheerung; small village; water scarce, from a spring. ✓

4. MAZANG.—Nine miles, north ; easy march ; impracticable.
The road descends gradually for 4 miles to the Mazachu; unfordable, wooden bridge; thence it ascends very steeply indeed up the face of the hill the whole way to Mazang. This march is impracticable on account of this ascent ; small village ; water scarce from a spring.

5. HARRACHU.—Eleven and half miles, north-north-west; easy march ; impracticable.
The road ascends gradually to the top of the Maza La above Mazang ; thence it descends gradually the whole way to the Harrachu; unfordable; crossed by a wooden bridge. There is one bad place on the descent, where the road overhangs the river by a rocky precipice; it only continues about 30 paces, and is practicable for ponies, but not with loads ; no village ; water from the river.

6. KISSONA.—Nine and half miles, north-north-west-north ; easy march ; practicable.
The road ascends the whole way to the top of the Chebu La, a small hill ; whence it descends gradually to the Kissonachu ; unfordable ; crossed by a wooden bridge (whence there is said to be a path by Gentaka and Tasseeling to Tangsa); the road then ascends gradually to Kissona, a rest-house ; water from a spring.

7. PIAREGAON.—Ten miles, north-north-west; easy march ; practicable.
There is a pretty steep ascent to the top of the Dole La, the highest point on this route after the Jori La, and on which snow falls but does not lie, whence it descends to the Deehu (whence a path by the Shawa La to Chindubjee) ; then it is pretty level, with a slight descent to the Piarechu; after which there is a gradual ascent to Piaregaon. This march hangs over the Pochu Mochu; there is a large house here for the Angdophorung Zongpe; a large village; water plentiful.

8. GIALA.—Ten miles ; easy march ; impracticable.
The road is generally very good and level to the Biameshochu, to which there is a descent. In one place, however, it overhangs the Pochu Mochu, and is too narrow to admit of laden animals.

9. ANGDOPHORUNG.—Thirteen miles, north-west; easy march ; practicable ; fort.
The whole road to this is very good, winding round the hills over the Pochu Mochu. It is quite practicable throughout; large village ; water plentiful ; cross Tanchu ; unfordable below fort.

10. PUNAKHA.—Eleven miles, north ; easy march ; practicable ; fort.
The whole road is very good, winding along the base of the mountains; cross the Pochu just below the fort ; water plentiful ; large village.

Remarks.—This route is used principally by the people of the Deb and Dharm Rajahs and those of the Angdophorung Zongpes. It is very good throughout except in the places particularized. I have myself been nearly up to Mazang on it, and I am of opinion that it is by far the best road into the country, as it is certainly the most direct, leading as it does to the heart and to Angdophorung, which is undoubtedly the key of the country.

Bagh Deoar to Tongsa. 7.

1. PICKSAO.—One day, north-north-east; difficult march ; impracticable.
The road leads along the right bank of the Dangmechu to its junction with the Mateechu, and then it crosses the former by a cane suspension bridge ; the road then runs along the left bank to just before the junction of the Kooroochu, when it again crosses by a cane suspension bridge to Picksao, which is merely a place in the jungle.

2. BIOKA.—Short march, west ; possibly practicable.
The road winds round the hills which intervene between the Dangmechu and Mateechu, and is pretty level ; no village ; water plentiful.

3. GUALA.—West-north-west ; a very long march ; impracticable.
The whole of this march overhangs the river Mateechu over steep rocky precipices. Shortly after leaving Bioka the Mateechu is crossed by a cane suspension bridge ; rest-house ; water scarce.

4. MARMU.—One day, west-north-west ; impracticable.
Still along the bank of the Mateechu overhanging it ; no village ; water plentiful.

5. PANKA.—One day, west-north-west ; impracticable.
The road is still along the bank of the river, and is very narrow; a small village ; water plentiful.

6. GONFU.—Twelve miles, west-north-west ; impracticable.
The road runs along the banks of the river, and is level throughout; but there are two places where the road is a mere ledge over the river ; village ; water from stream.

7. Twelve miles, west-north-west ; passable.
The road is level the whole way along the banks of the river ; there are two slight descents and ascents to small streams, fordable ; village ; water from a tank, not good.

8. JEMGAON.—Eleven miles, west-north-west ; impracticable ; fort.
The road is level for some six miles along a precipice over the Mateechu, and there are two places in the distance where the road is very narrow and not practicable; thence there is a descent to the Betunah Sam, a cane suspension bridge over the Mateechu, which is crossed (thence said to be a path to Bishan Sing) ; thence there is a very steep ascent of three miles to Jemgaon ; large village ; water plentiful from a spring below the fort ; thence a path to Jongar.

9. SANCHEE.—Twelve miles, north ; impracticable.
Descend steeply to the Andochu, unfordable ; which cross by a wooden bridge ; then ascend very steeply by zigzags to Riota La, the highest point on this route, whence there is a gradual descent of seven miles to Sanchee; no village here; water plentiful from springs and river below.

10. LAMTEE.—Seven miles, north; impracticable.
The road is very good for three miles over the Mateechu; there a very narrow ledge, built upon the face of the rock, and extending for some 200 yards, is passed; then descend to the Yokechu; small stream, fordable; whence ascend gradually; large village; water plentiful from stream.

11. TAKSEE.—Thirteen miles, north north-west.
The road descends gradually to a small stream, unfordable and bridged; then there is a slight ascent to Rife, a small village; whence it is level and good to Biaktee, another small village; then there is an ascent of from two to three miles to Taksee; a good-sized village; water scarce from a spring.

12. TONGSA.—Eleven miles, north-east; impracticable; fort.
The road is very good at first, and descends gradually to the Angochu, which is crossed by a bridge; thence for 600 yards there is a very steep ascent across the face of a precipice, into which steps are cut, hanging over the Angochu; then the road is good again, ascending slightly for five miles; then descending to the Tirgachu, unfordable, whence there is a very steep ascent indeed to Tongsa; large village; water plentiful; total distance twelve marches.

Remarks.—This road used to be followed by Bhuteahs from Tongsa going to the Assam Dooars, which were an appanage of the Chief of that place; but since the final annexation of these Dooars in 1842, it is said never to have been used. I have some doubts regarding the repeated crossings of the rivers described in the first two marches, yet every man I questioned was most positive on these points. It may therefore be possible that there is some insuperable obstacle to taking a straight line from Bagh Dooar to Guala. One thing is certain, that for laden animals this route is quite impracticable, more so perhaps than any other. Its advantages are that it crosses no snow line, and that there are no great ascents or descents; it is also the most direct road from our frontier to Tongsa. There is no reason why a force equipped with cooly carriage might not traverse it however.

Dewangiri to Tongsa. 8.

1. RAEDANG.—Seven and a half miles, north; easy march; practicable.
The road descends immediately on leaving Dewangiri, and continues so for one and three-quarters of a mile, when it enters the bed of the Deochu, up which it lies for the rest of the march; no village; water plentiful.

2. SALIKA.—Thirteen miles, north-west; impracticable.
The road ascends very steeply the whole way to Rimpanla, thence it descends to Salika. In attempting this march and the former with baggage animals, Colonel Richardson's force lost 13 elephants and 180 ponies.

3. KENKAR.—Eleven miles, west; impracticable.
There is a steep descent for three miles to the Demrichu, crossed by a bridge; thence the road follows its bank to its junction with the Dangmechu; here crossed by an iron chain suspension bridge, 303 feet span, passable with difficulty for ponies one by one; thence there is a steep ascent the whole way to Kenkar for six miles; large village; water plentiful from a stream.

4. TONGLA.—Twelve miles, north-west; practicable.
From Kenkar there is an ascent the whole way to Dempoo La, which is situated about half way between; snow falls here, but does not lie; thence there is a descent; good sized village; water from a spring, scarce.

5. KOOROOSAM.—Twelve miles, north-west; impracticable; far side of Kooroochu.
The road descends the whole way very steeply to the junction of the Zemrichu, a small fordable stream, with the Kooroochu; thence to Kooroosam. The Gomche Piah, or precipice of Gomche, was described by a man who had been up all the main routes to be the worst bit of road in Bhutan. It is a narrow ledge built upon the perpendicular cliff in places overhanging the Kooroochu for one and half miles; no village; thence roads to Tassgaon and Linchee.

6. JONGAR.—Six miles, west-north-west; practicable; fort.
The road is very good, broad, and ascending gradually, except once, when it descends slightly to cross the Nareechu; large village; water from springs and stream; thence roads to Bagh Dooar and Jemgaon.

7. SALEE.—Seven miles, north-west; practicable.
The road descends from Jongar to cross the Nareechu; it then ascends gradually by a good road the whole way to Salee; large village; water scarce, from a distance.

8. SENGO.—Seventeen and half miles, north-west; practicable.
The road ascends pretty steeply for eight miles to the Lato La; it does not go to the top, but winds round the face. Snow falls in considerable quantity on this pass, and though it lies, it is never impassable; thence there is a long descent the whole way to Sengo, below which the Sengochu is crossed by a bridge; good sized village; water scarce from a spring.

9. OORA.—Eighteen miles, north; impracticable.
The road ascends gradually at first for six miles, then steeply for one mile to the Tomsa La. It is then pretty level, when it ascends again to the Onta La, whence it descends the whole way to Oora. These two passes are covered with snow, which lies for a long time, and are impassable in the winter months; they are said to be higher than the Roodoo La (12); large village; water plentiful from a stream.

10. GIESA.—Sixteen miles, north; practicable; 9,410.
The road descends gradually to the Moorchangchoo, a large unfordable stream, crossed by a wooden bridge; there is a steep ascent to Sheta La, a hill on which snow falls but does not lie, whence the road descends to Giesa; large village; water from a stream.

11. TONGSA.—Fourteen miles; practicable; 6,527.

The road follows the banks of the Bomsachu for some time; then the ascent of the Yato La is commenced (10,930); on this pass snow falls and lies in the winter; thence there is a long and uninterrupted descent to Tongsa, towards the end becoming excessively steep; total distance 11 marches, or 133 miles.

Remarks.—This is the road used by the Bhuteahs coming from Tongsa to Dewangiri, to which place it is the most direct. Whether it is the most practicable route to Tongsa is another question. I think not, for the reasons that it crosses three large streams, one of which is the largest in Bhutan, and because it crosses no fewer than four of the main drainage lines in the country. The experience of Colonel Richardson's advance on this road has proved in the most satisfactory manner that it is impracticable for laden ponies.

Dewangiri to Tassgaon. 9.

1. RAEDANG.—*Vide* Route No. 8.
2. KHERIGENPA.—Eleven and a quarter miles, north; impracticable; 7,000.

This road ascends steeply to an elevation of 7,000 feet; thence it continues to run along the ridge, winding round an eminence which towered above in overhanging precipices; thence it is level in to Kherigenpa; village; water scarce from a distance.

3. TSATSI.—Ten miles, north-north-east; practicable.

The road descends gradually at first; it then becomes steep and continues so for some time. It is then level for a way, when it again descends to a small torrent; it then ascends slightly to descend to the Demrichu, a small stream, fordable. Thence the road ascends the whole way till just before reaching, when it descends slightly; small village.

4. BULPHAEE.—Eleven and three-quarter miles, north-east; impracticable; 6,804.

The road descends steeply and uninterruptedly to the bed of Jeeree, whence it rises 500 feet, and again descends to the bed and goes up it for a mile. Thence there is an ascent the whole way by a very narrow path hanging over steep precipices; village.

5. TASSGONG.—Thirteen miles, north-east; fort; practicable; 3,100.

The road first ascends a ridge to the north-east of Bulphaee to 8,000 feet, but not to the summit; thence the road is level till there is a very steep descent to a small stream, followed by a slight ascent to a village of Roong-doong, 5,175; thence the road descends gradually at first, then very rapidly to the Demree Nuddee, which it crosses; it then runs along on the right of the ravine 1,000 feet above it, ascending into Benka; thence roads to Jongar, Tassangsee, Thibet, and Towang.

Remarks.—This route is used by the people of Tassgaon and the north, and also by the Thibetans, who come for purposes of trade. These people bring loads of salt on sheep and donkeys, so that the road is practicable for these animals; nevertheless I do not think that it can be considered practicable for larger animals and more bulky loads which a force would take with it. Tassgaon I take to be a place of very great importance; total distance five marches, or 53½ miles.

Bengbaree to Tassgaon. 10.

1. KHERKERIA.—Three hours.
2. KAKPHAGAON.—Twelve hours, north.

The road goes over a hill of considerable elevation called Aneonee, and a stream, called the Jamooree—fordable—is crossed; village.

3. LAHOREE.—Twelve hours, north.

The road runs along the Jamooree, north; village.

4. JELA CHENKAR.—Three hours, north.

The road runs along the Jamooree, north.

5. MERAGAON.—Twenty-four hours, north.

The road leads over Sirkem La, in which the Jamooree takes its rise; another stream, the Neriana, is crossed near Meragaon, which is inhabited by Borookpa Bhuteahs; a village of 40 houses.

6. RADHEE.—Nine hours, west.

The road lies over a small hill, Mondie, to the north-west of Radgeegaon.

7. TASSGAON.—Nine hours, west.

The road runs along the river Gamooree (Monass?)

Remarks.—I regard this route in its present state as little more than to serve as a guide to procuring better information regarding it. The names are of course useless, being Bengalee; but the fact of there being one very high hill to cross after which the Gamooree is reached, shows that there is such a route. The high hill is the great ridge which forms the southern water-shed of the Monass, and the Gamooree is undoubtedly the Monass, Dangmechu, or as it is called by Pemberton, the Goomaree.

Dalingkot to Teesta Bridge. 11.

1. LABAR.—Eleven miles, north-west; impracticable; 6,620 feet.

The road ascends very steeply the whole way from Ambiokh to the ridge on which Laba stands; village; scarcity of water.

2. PAIONGAON.—Eight and half miles, west; practicable; 4,751 feet.

The road is level and good to the Rhishigenpa, whence it descends gradually; village.

3. KALIMPOONG.—Ten miles, west; practicable; 3,733 feet.

The road is good and pretty level throughout, descending; a village; water plentiful.

4. TEESTA BRIDGE.—Seven and a half miles, west-south-west; practicable; 1,122 feet.
The road descends gradually the whole way; no village. Except the first march, this road is very good, and this could easily be made good. It may become a road of very great importance; and there is no doubt that the most practicable line for a road to Thibet is by the Pango La ridge, on which Laba stands. Four marches or 27 miles.

Dalingkot to Chumbi. 12.

1. LABAR.—*Vide* No. 11.
Eden states that there is a road thence to Jantsa, but I think he is wrong.
2. RHENOKH.—Fourteen miles, north.
The road ascends along the ridge for three miles to the Kiempon La, thence it descends steeply to the Rhishichu, along whose banks it continues descending for seven miles, when it ascends very steeply to Rhenokh; large village; water from a stream.
3. CHUZACHEN.—Ten miles, east.
The road ascends at first to the top of the Rhenokh spur, it then descends very steeply indeed for five miles to the Ronglichu, unfordable, and crossed by a cane suspension-bridge; then there is a steep ascent of four miles.
4. KENNA.—Eleven miles, north-east.
The road ascends steeply to the top of the spur, here known as Loongsoong, two miles; thence it descends the rest of the way gradually to Kenna, a small village.
5. NATON.—Fourteen miles, north-east,
The road ascends not very steeply the whole way to Natong; there is a village; water from a spring.
6 YATONG.—Twelve miles, north-east.
The road ascends for two miles to the top of the Loongtoong La, a snow pass to Thibet, never shut; thence it is level for one mile to the Beetangtso, a large lake, in which it is said that the Dechu takes its rise. The road runs along the whole length of this, and is level the whole way into Yatong, following the top of the ridge.
7. BEELOOM.—Twelve miles, north-east; practicable.
The road goes along the ridge for five miles quite level; it then descends to the Beeloom, a small stream which falls into the Am Mochu, and continuing descending down it for five miles, come to halting place on its bank.
8. CHUMBI.—Fourteen miles, north; practicable.
The road descends very gradually for five miles to Rechingaon, a large village; thence for nine miles it is perfectly level into Chumbi.
This is the most direct and easiest pass from Thibet to Darjeeling, but the Thibetans used the Cho La and Yak La in preference, because a greater part of the above road ran through Bhuteah territory. It is not to be doubted by any who know the lie of this country that the Grand Thibet road shou ldtake this line from Laba to the Pango La and Loongtoong La; by this means the passage of all the drainage lines of the ridge would be spared. I shall do myself the honor hereafter of speaking more fully on this important subject.

Dalingkot to Chumbi. 13.

1. LABAR.—*Vide* No. 11.
2. RHENOKH.—*Vide* No. 12.
3. PANGO LA.—Sixteen miles, east.
Ascend the ridge on which Rhenokh stands; then descend steeply to the Ronglichu; then ascend very steeply to Pango La.
4. NATONG.—Fifteen miles, north-east; practicable.
The road ascends gradually the whole way to the ridge of Natong.

5, 6, 7, 8—*Vide* No. 12.

Dalingkot to Sipchu, (upper road.) 14.

1. NURCHU RIVER.—Three and a half hours, north.
Ascend from Dalingkot, the eastern water-shed, steeply for two hours and three-quarters; then descend steeply to the bed of the Nurchu River.
2. THODHE.—Five hours and a quarter, east.
Ascend very steeply from the Nurchu for two hours, then continue the crest of the spur for one hour and three-quarters and descend steeply to Thodhe, a small village; water scarce.
3. JANGTSA.
From Thodhe the road descends steeply to the Nechu and then ascends to Bohrang, a small village when it descends again to Jangtsa village; water plentiful.
4. SIPCHU.—Ten miles, south.
The road ascends and descends steeply over small spur, but is otherwise good; village; water plentiful.
This route is a mere track through dense forest, unfrequented save by a few herdsmen with their cattle; nevertheless it is a most important one, as it affords the means to an adequate force stationed at Daling to *cut in on the line of retreat of any Bhuteah force attempting to operate against Sikkim and Darjeeling by the Pango La.*

Dalingkot to Sipchu, (lower road.) 15.

1. TSAKAMCHU.—Seven and a-half miles, south; practicable.
The road descends the whole way through dense jungle. Just before coming to the Tsakamchu the descent becomes steep; no village.
2. MOCHU—Ten and a half miles, east; practicable.
Through dense forest and in the plains, half-way cross the Murchu, fordable; no village.

3. SIPCHU.—Ten miles, east, then north ; practicable.
Still through dense forest ; at eight miles cross the Dechu, unfordable ; then ascend gradually ; village.
This route could not be used in the rains, the whole of it running through the unhealthy terai.

Sipchu to Chumbi. 16.

1. JANGSTA.—*Vide* No. 14.
2. BORANG.—Seven and a half miles, north-west.
The road descends steeply for two miles to the Dechu, unfordable, and crossed by a suspension bridge ; it then follows along the bed for half mile to the junction of another smaller stream from the west. This is also crossed by a suspension bridge, whence a path ascends very steeply for four and a half miles ; a village.
3. PANGO LA.—Twelve half miles, north-west ; impracticable ; 9,400 feet.
Ascend steeply the whole way for 2½ hours to Thondi, where the only water found on this march is. Thence 1½ hours of steep ascent to Chuntong, a clearing in the jungle, and again, still ascending for 2½ hours, to Yuletso, where there is water ; then on to Pango La, still ascending.
4. NATONG.—East-north-east.
The path descends till it joins the route given in No. 12, whence it is the same to Chambi.
This route is probably very little used indeed, then only by Bhuteahs of the Dechu valley in going from their village to Sikkim or Thibet.

Sipchu to Sangbe. 17.

1. TSIGAON.—Seven miles, north-east ; 5,756 feet.
For quarter mile runs up a small stream, and then ascends steadily through a dense forest, often in zigzags ; at 2½ miles the ridge becomes a little more level ; camp good ; water from a spring 200 yards down the hill on the south.
2. THLUNCHU.—Five miles, north-east ; 6,178 feet.
The road ascends not very steeply the whole way. Thence a road to Jangtsa ; water scarce.
3. DONGOCHUCHANG.—Nine miles, north-east and east ; 8,580 feet.
The road still leads up the same spur, very stiff on starting ; and just before the highest point of the Toole La pass is reached, it turns east and runs along the south face of a high hill, the culminating point of the Sipchu spur. This part of the road is very bad. On arriving at another spur the road is very good and bad, a few rocky bits here and there. At 1½ miles from Dongochuchang a very steep descent commences.
4. AM MOCHU RIVER.—Six miles, east ; 3,849 feet.
The road descends very steep and bad ; at 4½ miles pass Yarbukka, and a small stream bridged.
5. TSANGBE.—Seven and a half miles, east-north-east.
On leaving the road ascends by a very steep, but well cut zigzag to an elevation of about 1,500 feet above the river, when it becomes level till rounding a spur, when there is a very steep descent to cross a ravine ; thence there is a very steep ascent to Tsangbe village ; water plentiful.
This is the main road to Dalingkot and the plains from this part of Bhutan.

Tsangbe to Chumbi. 18.

I have heard that there is a direct route from Tsangbe to Chumbi by the Chona La, which is now disused, but I have been unable to get any man who has been by it. My informant, a Zinkaff of the Tsangbe Tooms, states positively that there is no route to that place by the banks of the Am Mochu, which he said were very rocky and precipitous, and quite impracticable.

Tsangbe to Chamoorchee. 19.

1. RONCHEKA.—One day, south-east ; impracticable.
The path descends steeply to the junction of the Sakchu with the Am Mochu ; it then continues by very narrow and dangerous path along the banks of the latter river. The path is built upon poles in many places, and is scarcely passable for a coolie even. Small village ; water plentiful.
2. NAMCHU.—One day, south-east ; impracticable.
The road continues in the same manner, overhanging the Am Mochu, by an extremely narrow and dangerous path ; no village. Bridge over the Am Mochu ; water plentiful. Thence there is said to be a path in one long day's journey to Bala, still following the banks of the Am Mochu.
3. PHLOBI.—*Vide* No. 1.
4. SABEEGAON.—*Vide* No. 1.
5. CHAMOORCHEE.—*Vide* No. 1.
This path is very little used. For a force operating against Tsangbe I should imagine the Toole La route would be much preferable ; still this could be used by a lighter column to turn any defences the Bhuteahs may have made in the direction of the Toole La, or for the passage of the Am Mochu. Though I have not heard of any path, I do not think it improbable that there may be one which leads from Tsangbe to the Doona valley by a more direct route.

Tsangbe to Hah. 20.

1. SAIBETONG.—Ten miles, generally east ; 6,143 feet.
The road is level as far as the village of Giare, thence it descends gradually to within one mile of the Sukchu, when it becomes very steep ; after crossing this river it ascends in steep short zigzags to a small village, whence it continues good ; rounding the main spur and ascending easily to Saibetong village ; water plentiful from a stream.
2. MIRIM.—Six miles, north-east ; 9,526 feet.
The road descends 300 feet to the Saychu, unfordable ; thence there is a steady steep ascent through a forest the whole way in ; village ; water very scarce.
3. TEGONG LA.—Eight and half miles.
The road enters a pine forest at one mile and ascends steadily for four miles between Bioka and Safebji ; it becomes very bad and narrow, the clay being cut deep into from use and from running

water; afterwards it is tolerably good and level to the Tegong La, which is an easy pass; thence descends through forest to camp; water plentiful. If there was snow on this pass, the marches would be Safebji and Dorika.

4. HAH.—Fifteen miles, east-north-east and north-north-east.
The road runs down a confined ravine, crossing and recrossing a stream ten times by plank bridges; at the last bridge the stream is left, and the road continues level till the descent to the Harchu. Here it is very narrow and steep, cross Harchu by bridge, thence the road is good, running up the valley and crossing the Harchu three times; village; water plentiful.
This is the main road to the westward.

Hah to Chumbi. 21.

1. AMGOCHIM.—A long march; sixteen miles, north-north-west; practicable.
The road is very good, gradually ascending by the banks of the Harchu, which it constantly crosses; water plentiful.
2. ASOMBOTSA.—Twelve miles, west; practicable.
The ascent to the Meeree La is steep from the summit; it becomes very gradual right in; village; water plentiful.
3. RINCHINGAON.—Ten miles, west; practicable.
The road descends very gradually to the Am Mochu, which it crosses by the Doyapsam, then on to Rinchingaon; large village; water plentiful.
4. CHUMBI.—Nine miles, north; practicable.
The road is quite level throughout; two small streams, affluents of the Am Mochi, are recrossed; large village; water plentiful.

Hah to Doona. 22.

As far as Dorikha, *vide* No. 20; thence it follows the Chamoorchee route for five miles, whence there is a path which leads down the east side of the ridge to Doona, which is two long days from Dorikha. My informant, an old man, said he went by it many years ago, when bolting from Hah; that there were no villages on the road, being all through jungle with occasional clearings. He did not remember much more about it except that he had been by it.

Hah to Durbee. 23.

1. HARCHU SAN.—*Vide* 20.
2. BEDEKA.—Ten miles, east; impracticable.
From the bridge the road ascends till it surmounts a spur, when it again descends to the bed of a stream; it follows this for half a mile, and then there is a steep ascent to Bedeka.
3. DURBEE.—Twelve miles, east; impracticable.
The road ascends to the top of the ridge on which Bedeka stands, and then descends, and continues level for a time, when it again ascends steeply, and then descends the whole way to Durbee.

Hah to Dajezong. 24.

This can be done in one march by an unencumbered man; the path follows the Harchu, crossing and recrossing it till its junction with a stream from the north, when the path leaves it and ascends this last for a few miles, when it ascends steeply the Kale La, on reaching the summit of which the road descends the whole way to the fort.

Hah to Paro. 25.

Thirteen miles by the Khi La; the ascent is very steep to the top of the Khi La; 12,492 feet; thence it is gradual; snow falls heavily on this pass in winter. There is a road by the Saka La, which surmounts the same ridge at a lower elevation and comes down right above the fort; and a third pass to the south of the Khi La, called the Khala La; this is lower and more free from snow, but the road is worse and very narrow.

Hah to Phari. 20.

DOJEZONG.—Nine miles, north-west; practicable.
Leaving the fort, the Parchu is crossed by a bridge; thence the road; thence the path proceeds up the valley, not far from the river, passing through the market-place and some cultivation and villages; the ascent is very slight, scarcely perceptible; village; water plentiful
2. SANA.—Eleven miles, north-west; practicable.
The road follows the river the whole way through a narrow valley with a moderate, though perceptible, ascent; village; water plentiful.
3. GHASSA.—Cross the Parchu on leaving, then follow the river at a short distance from its bank through a narrow valley, then there is a very steep and impracticable ascent.
4. PHARI.—On leaving cross the Parchu again for the last time; thence the road ascends very steeply to the Piem La, a high pass covered with snow, from the summit of which the descent is very gradual.

Paro to Durbee. 27.

1. NABESA.—*Vide* No. 2; thence a path to Eusana.
2. PIAONG.—Eight miles, south-east.
The road is good the whole way, ascending and descending, generally gradually, but occasionally steeply to cross two small streams.
3. DURBEE.—Six miles, south
The road is good and nearly level the whole way; thence roads to Chapcha, Tasichozong, Buxa and Bala.
This road is not much used, but it might prove very useful as a means of turning the main road to Paro by Badeka.

Paro to Chapcha. 28.

1. EUSANA.—South-east.
The road goes down the valley of the Parchu, and is very good; village; water plentiful.

2. DOGASAM.—
The road follows the Parchu to its junction with the Tchinchu, whence, winding the shoulder of a spur, it follows the latter river; bridge over Tchinchu; water plentiful.

3. CHAPCHAH.—
The road follows the bank of the Tchinchu for one mile to the Durbeessam, thence three-fourths mile ascent to Durbee, whence crossing it ascends to the main Buxa road, thence to Chapchah.

Paro to Buxa. 29.

Go to Durbee by any of the above routes, thence descend for half a mile to Onaka on the Tchinchu.

NAYEKA.—Eight miles, south.
The road is tolerably level, but narrow to the junction of the Harchu and Tchinchu, when it crosses the former by a wooden bridge; then a slight ascent to Nayeka; a village; thence Geleegempa and Bedeka.

TOO LA.—Thirteen miles, south.
The road descends gradually for seven miles to the Teechu, a small stream; fordable; thence it ascends the whole way to Too La, a pass over this range; no village; water scarce; one mile below a small spring; thence path to Doona and Cheeka.

TSO MAM.—Ten miles, south.
The road continues along the ridge for six miles, when it descends pretty steeply to the Harchu Loom; it then ascends and descends sometimes on the ridge and sometimes off to Tso Mam, a bank on the top of ridge, with a little water; resting place in jungle.

CHESTAKA.—Twelve miles, south; resting place in jungle.
The road keeps to the top of the ridge, but now and then dips down and ascends again steeply; it is not level, but ascends and descends the whole way; water dirty, from a tank.

GEDOO.—Eight miles.
The path is generally very good at first; there are two or three steep descents; thence it descends gradually the whole way to Gedoo, through forests; large village; water plentiful.

MURICHOM.—Ten miles.
The road descends gradually for six miles, when it joins the main Buxa road.
This road is seldom used except by Bhuteahs bringing their cattle from the interior to graze on the outer ranges, and it could not be used in the cold weather, as a greater part of it lies above 10,000 feet, and is under snow for a couple of months; nevertheless it affords the means to a light column of turning all the defences which might have been run up either on the Bala or the Buxa roads.

Chuka to Doona. 30.

1. TOO LA.—One long day, north-west.
Cross the Tchinchu by the Chuka Sam; thence the road ascends the whole way, passing village of Geemchatee, where a halt might be made; there is a descent to cross the Henchu Loom; resting place in jungle; all through forest.

2. DOONA.—One long day, south-west.
The path descends very steeply at times to Doona, passing the village of Da half way, where a halt might be made.
This is the road which Bhuteahs coming from Doona to Chuka and *vice versâ* would use. In short, a column of Bhuteahs collected in the Paro district could by this route cut in on the line of operations of a force advancing against Tasichôzong, &c., by the Buxa route.

Doona to Buxa. 31.

1. DABUSA.—A long march, south-west.
The path ascends the whole way after passing the Doonchu, latterly very steeply. The village of Metaka is passed at three-fourths distance; village; water plentiful.

2. GEDOO.
The path ascends very steeply for three miles to a peak where Lapsa and three roads meet; from thence *vide* No.

3. TAPSEE.—Sixteen miles.

4. BUXA.—Fifteen miles.
By this route the Bhuteahs could reinforce from the Paro country any force of theirs operating against Buxa, or a British column starting from Buxa could turn the Bala Pass by it.

Murichom to Tagana. 32.

1. KETOKA.—Ten miles, north-east.
From Murichom the road descends very steeply, indeed to Pade Sam a cane suspension bridge by which the Tchinchu is crossed; thence there is a continued steep ascent the whole way to Ketoka, passing underneath the village of Damje; village; water plentiful.

2. GETANA.—Sixteen miles, east-north-east.
The path leads out level for a short way, then it ascends not very steeply to the Bamfoola pass; snow occasionally falls in slight quantity on this pass. From here there is a long descent the whole way to Getana; large village; water from a stream; thence roads to Chapcha, Chuka, and Bhegoo.

3. TAGANA.
By this route the Tagana people could reinforce any Bhuteah force attacking Buxa. In fact the Taga Penlow came by this route when coming to Buxa with his forces in February, March 1865; also all of Bhutan to the east of this could come in on the line of operations of a force advancing by the Buxa route.

There is said to be a path between these places; I was told by an individual who confessed to having committed murder at Tagana and ran away. He avoided the better route to Murichom and Chapcha for fear of being seen. He said he had heard while at Tagana that there was a track between that place and Chuka, and that was the reason for adopting it. He could not give much account of it yet, the fact of its existence is something. I may as well mention, as an illustration of Bhutan government, that this individual is now an honored dependent of the Chapcha Penlow, the little *contretemps* at Tagana probably serving as a special recommendation. Chuka to Tagana. 33.

Chapcha to Tagana. 34.

1. TAGO LA.—East; impracticable.
   The path leads out of Chapcha up the Dokachigenpa, when it ascends gradually to the crest of the ridge, and turning eastwards reaches the Tagola. Some snow falls on this pass in the winter; no village; thence path to Angdophorang.
2. DOOMA.—South-east; impracticable.
   The road descends very steeply the whole way to Dooma. No village; water from a stream.
3. BEDEKA.—Twelve miles south-east.
   The road descends gradually the whole way. No village; water scarce.
4. KONGAKA.—10 miles south-east; practicable.
   The road is good throughout; some slight ascents and descents.
5. TAGANA.—9 miles south-east; practicable.
   The road is good throughout. This is the main route between these places. I don't see that it has much strategical importance.

Chapcha to Angdophorang. 35.

1. TAGOLA.—*Vide* 34.
2. HESOKA.—12 miles east-north-east; impracticable.
   The path descends pretty steeply the whole way to a village called Eusaka, thence ascends to Hesoka. Village; water plentiful.
3. ANGDOPHORANG.—14 miles north-north-east.
   From Hesoka the road decends the whole way steeply to the Peso-chu, which cross; then slight ascent, and descend again to the Peso-chu; thence level but narrow into Angdophorang.
   This route might prove of the greatest service, as it could enable a column advancing by the Buxa route against Punakha or Angdophorang to disconcert all plans of defence beyond Chapcha, and to seize Angdophorang before it could be prevented.

Tagana to Angdophorang. 36.

1. PINSOPEEBEE.—13 miles north.
   The path is level for about 9 miles to the Lone-chu, a considerable stream, unfordable; when it descends shortly and steeply; thence it ascends very steeply and by zigzags the whole way in. Village; water from a small stream.
2. KAMGANKA.—13 miles north.
   The path leads at once by a tolerably steep ascent to the Dolela, a low hill; then it descends very steeply to the Takachuka; whence after a slight ascent it continues pretty level not far above the Pochu Mochu.
3. OOMA.—11 miles north-west.
   Descends steeply to the Kamgachu, unfordable; cross by bridge; thence there is a very steep ascent to the Boomla, a low hill; thence very steep descent by zigzags to the Pess-chu, whence the road ascends to Ooma. Water plentiful.
4. ANDOPORANG.—13 miles north; impracticable.
   Shortly after leaving, the road comes to be a narrow path hanging over the river, and at six miles to the Penjo Piah the path is narrow and descends down stone steps cut in the face of a rock precipice to the Poojacha, whence, after regaining its former level, it continues pretty good, though narrow, to the bridge over the Mochu.

Tagana to Cheerung. 37.

An unencumbered man can go in one day. The path descends very steeply to the Mochu, which is here crossed by a basket-bridge; thence it ascends the whole way into Cheerung.

Paro to Tasichozong. 38.

1. PEMETONG.—10 miles north-east and south-east.
   The road passes close under the walls of the fort, and crosses a sort of parade-ground; it then ascends a hill by a good broad zigzag, passing three outposts which command the fort; whence up to the Biela Pass the ascent is gradual. On reaching the summit there is a very steep descent to the Pemetong. Village; water from stream.
2. TSELUMARPHI.—11 miles south-east and north-east.
   The road leads down the Tsulchu to its junction with the Tchinchu, to the left bank of which it crosses at Sunoo, and in three-fourths of a mile before Tselu it again crosses. Village; water plentiful.
3. TASICHOZONG.—Cross the river Tchinchu at Oolaka, then fall in the main Buxa route.

Paro to Tasichozong. 39.

1. PEMETONG.—*Vide* 38.
2. TASICHOZONG.—The road leads along the bank of a river, and then ascends gradually to the Pome La, on which a great deal of snow falls; thence the descent is very steep the whole way to the Tchinchu, which it here crosses to the fort.

Tasichozong to Punaka. 40.

1. PELBEONG.—Fifteen miles east; practicable.
   To Oolaka as by route No. 3. From this the path follows the bed of a small torrent in an uninterrupted ascent till the ridge of the Dokien La is reached, whence there is a steep descent the whole way in.

2. PUNAKA.—Practicable.
The road ascends to the Pochu Mochu, whence it follows the banks of that stream the whole way in, being good and broad the whole way.

Tasichozong to Punaka. 41.

This route leads by the Tchinchu La, a pass to the north of and more direct than the Dokien La. The path on leaving follows the banks of the Tchinchu for some three miles; then, turning to the east, an ascent of some six miles commences, very gradual and quite practicable; thence it descends the whole way to the Mochu, which it crosses under the fort, passing the village of Kabesa on the way. This is the most direct pass between these two places, but it is not much used. A good deal of snow falls on it. It is mostly used by people from the north-west corner of Bhutan going to Punaka when the court is there.

Tasichozong to Angdophorang. 42.

To Oolaka as in route No. 3; thence the road goes east, and commences the ascent of the Hinle La at once: it is very gradual and quite practicable for ponies. From the summit the road descends to the Nahi Loom, along whose banks it goes to its junction with the Mochu, when it crosses the latter river under the fort. This pass has snow on it in the winter months, and it is very easy throughout; it is the most direct road to Angdophorang.

Tasichozong to Lingjeezong. 43.

1. PANBISAM.—Four miles north-north-west; practicable.
This is not a march, but is usually made the first day's halting-place. After leaving, the road leads along the banks of the river, perfectly level and practicable throughout.
2. DOTENA.—Twelve miles north-north-west; practicable.
The road runs along the banks of the river, and is quite level and broad throughout; village; water from a river.
3. PARSANG.—Thirteen miles north-north-west; practicable.
Road, as in last, good throughout; no village; water from a river.
4. JAICHI.—Fifteen miles north-north-west; practicable.
Road still continues good till just before reaching Jaichi, which is situated at the foot of the Yale La pass.
5. LINGJEE.—Six miles north.
The ascent to the Yale La pass is gradual, with a short steep bit at the end; from the summit the descent is very gradual. This is very high, and it is sometimes shut with snow in the winter.

Punaka to Gassezong. 44.

1. RINCHU.—Twelve miles north-north-west; practicable.
The road is very good, leading along the banks of the Poohu the whole way.
2. JEESA.—Ten miles north-north-west; practicable.
Road as in last.
3. GENTAMBEE.—Thirteen miles north-north-west; practicable.
Road as in last, with a slight ascent at the last.
4. SAMENA.—Eight miles north-north-west; practicable.
There is a slight descent to a small river, which is crossed, and then there is a gradual ascent to Samena.
5. GASSEZONG.—Five miles north-north-west; practicable.
The road ascends the whole way, but is very good; a fort; water plentiful.

Punaka to Tongsa. 45.

1. PHAEN.—Eleven miles south; 5,280.
The road follows the banks of the Pochu Mochu, quite level and good till one mile and a half from the Tanchu it turns to the east and ascends gradually to Phaen; village; water plentiful.
2. SANTAGAON.—Six miles east-north-east; 6,800; practicable.
The road at first ascends slightly to a low ridge above Phaen; it then winds along the face of the hill, descending gradually; then there is a steep ascent of 1,000 feet; and then a small stream is reached, crossing which there is an ascent of 1,800 feet to Santagaon. Large village; water from above by bamboo aqueduct.
3. REETANG.—East; practicable; 6,965 feet.
The road ascends for a long time to a height of 8,374 feet; it then continues for some time at this elevation, and then descends steeply to a small nullah which joins the Gnee north; then follow this stream for a short way, and then ascend steeply to Reetang.
4. TCHINABJEE.—7,860 feet; practicable.
From Reetang there is an uninterrupted and steep ascent to the summit of the Peele La, a pass on which snow falls in the winter; thence there is a long but gradual descent over easy grassy slopes to a small village, whence, following the line of the Rokoochu, the path generally at a small height above it. Village; water from a stream.
5. TASHILING.—East; 7,230 feet; practicable.
Follow the river Rokoochu or Meeootechu for one and a half mile to a fine temple; then wind along above the stream at nearly the same altitude; then ascend the ridge above Tashiling and descend 800 feet to it. Village; water from a stream.
6. TONGSA.—Seven miles east; 6,250 feet; impracticable.
The road on leaving descends for a short distance; then winding round the face of the hills overhanging the Mateechu by a narrow path. Before descending to the Mateechu two very narrow places built upon the side of a precipice are met, and the descent to the bridge is very steep and narrow by zigzags. The river is crossed by a wooden bridge; then there is a very steep ascent indeed to the fort.

Jongar to Jemgaon. 46.

1. Oro La.—12 miles west; impracticable.
   The road on leaving descends and crosses the Nareechu; thence the whole march, ascending very steeply to the Orola, a pass on which snow falls in the winter. No village; water far and scarce.
2. Neemgaon.—13 miles west; impracticable.
   The road descends very steeply the whole way to the Moorchangfoo; here a large river, which is crossed by a cane suspension bridge, whence there is a very steep ascent to Neemgaon. Village; water from a stream.
3. Boolee.—10 miles west; impracticable.
   The path ascends very steeply for six miles to the Meele La, a pass on which snow seldom falls; then descends to Boolee for four miles.
4. Jemgaon.—14 miles west; impracticable.
   The road descends to the Boolecha, fordable; then ascends the spur which is above it; there is then another descent to the Taleechu, followed by an ascent called the Papse La; whence, after a slight descent, the path follows into the Bagh Dooar road and is level right into Jemgaon.

Jongar to Lingtsi. 47.

1. Nierlsi.—20 miles east, then north; impracticable.
   As far as Kooroosam,—*vide* No. 8; thence the road goes along above the Kooroochu, and is very narrow, and in places is built up over the river. Some small streams are crossed, one just before arriving, from which there is an ascent. Village; water plentiful.
2. Lingye.—16 miles north-north-east.
   The road runs along above the river at a greater distance than the last march, and is tolerably level throughout; some slight ascents and descents to small streams. Village; water from stream.
3. Lingtsi.—20 miles north-north-east; impracticable.
   The road descends till it comes just over the Kooroochu; it then continues at the same level above the river the whole way to the bridge. There are several very narrow places built up over the river which is crossed just.

Jongar to Beyagur. 48.

1. Salee,—*vide* No. 8
2. Sengo „ „ 8
3. Oora „ „ 8
4. Beyague.—15 miles north.
   The road ascends from Oora to the Shetala; it then descends into the Membarchu, and then continues level for some seven miles above the Moorchangfoo, which is then crossed, and ascends.

Jongar to Tassgaon. 49.

1. Mongar.—10 miles east; impracticable.
   As far as Kooroosam,—*vide* No. 8; thence the road ascends into Mongar, which is the summer residence of the Jongar man.
2. Gnasang.—9 miles east.
   The road ascends at once to the summit of the Korela, on which a little snow falls; then descends to Gnasang six miles uninterruptedly.
3. Hechu.—15 miles.
   The path descends pretty steeply to the Shreereechu, which it crosses by a bridge; then it descends very steeply to the Pagela, a low hill, and then descends to the Hechu, where encamp. No village.
4. Tassgaon.—12 miles east.
   The path descends for a mile to just above the Dangemechu, then continues at the same level, winding round the hills to the iron chain bridge, when it ascends steeply into the fort.

Lingtsi to Tashangtsi. 50.

1. Lenje.—South; 6,330 feet; impracticable.
   Descend gradually to Kooroochu, which is crossed by a wooden bridge; in quarter mile come to the Koomachu, which is crossed; then ascend to above the Kooroochu and continue above its banks about 800 feet; then ascend steeply and turn east towards Lenje. Village; water from a spring.
2. Sangta.—15 miles east; 8,000 feet; impracticable.
   The road commences ascending at once, at first gradually, but on coming within 1,500 feet of the summit of the Dongala it becomes very steep, by zizzag paths built up on the faces of the precipices. On the summit being reached (12,500), thence there is a very steep descent to a height of 11,000, after which it is more gradual, though still steep the whole way in. Snow falls very heavily on this pass in winter. Village; water from a spring.
3. Tashangtsi.—5,270 feet.
   The road descends at once into Sangtashu and continues down the bed of it, descending till just under the fort, when it ascends steeply.

Lingtsi to Tongsa. 51.

1. Tamchu.—5,000 feet.
   The road ascends for about 1,000 feet, then follows the course of the Kooroochu, then descends to Tamchu.
2. Oonga.—West; 6,370 feet.
   The road ascends at first for 800 feet; then descends to a small torrent, which it crosses; then ascend gradually to a ridge 7,300 feet; then descend very gradually to just over Oonga, when the path descends very steeply. Village; water from stream.
3. Pemee.—9,700 feet; west.
   The road winds along nearly at the same altitude to the descent to the Oongachu; then cross this by a wooden bridge twice in 200 yards; thence a fearfully steep ascent, becoming more gradual towards the end. Village; water scarce.

4. BOOMDANTANG.—13 miles west; 8,700 feet; impracticable.
The road ascends for 1,000 feet easy enough, but after that it increases much in difficulty, a great part of the path being built upon the face of sheer precipices; pass the Rodoo La pass, which consists of a gap between two rocks barely wide enough to admit a pony, 12,300 feet; from this still ascend to 12,600 feet, the summit. This pass is covered with deep snow in winter, and is frequently impracticable. Then the path descends, at first very rapidly, then gradually; then a steep descent to within 1,000 feet of halting place.
5. BEYAGA.—14 miles west; 8,150 feet.
The road goes down the bed of the Tang-chu for a short way, when crossing it it descends, to descend again to another nullah; then comes a steep ascent, which continues to a ridge above the Kooroochu, to which it descends, and crossing ascends to Beyaga.
6. GIESA.—9,410 feet.
The road ascends at once to a pass, 11,035 feet, on which a good deal of snow falls; then continue for some time at the same level; then descend to a small nullah 9,642 feet high; then re-ascend slightly, and lastly descend to Giesa. Large village; water plentiful, but far.

Tashangtsi to Tassgaon. 52.

1. PHALANG.—South.
The road descends to the Kolochu, which is crossed by a wooden bridge, when it follows above that stream the whole way, descending to cross one or two small streams.
2. KEMNA.
The road winds along the course of the Kolochu, gradually ascending the whole way. Village.
3. NOLKA.—4,300 feet.
Descend uninterruptedly to the Kolochu and cross by a wooden bridge; then follow it for a short distance to its junction with the Dangmechu, and continue along its right bank to Nolka, passing some very narrow places built up over the river. Village.
4. TASSGAON.—3,100 feet.
The road follows the right bank of the Monass, hanging over the river by narrow paths; it is very difficult. Fort.

Biyaga to Thibet. 53.

1. GUALAGAON.—15 miles north.
Descend to the Moorchangfoo and cross; then continue along its bank the whole way in. The road is good throughout; water plentiful.
2. NGASFE.—13 miles north.
The road is very good, running along the left bank of the Moorchangfoo. Village; water plentiful.
3. TSAMBA.—20 miles north.
The road is still level, and runs along the river the whole way. This is the farthest Bhuteah village. The Thibetans come here to trade. The frontier is some way beyond a short march.

Ling-chi to Thibet. 54.

There is said to be a road from this place which runs along the bank of the Kooroochu the whole way.

Tashangtsi to Thibet. 55.

My informant said this was one of the principal routes from Thibet, and that it went by the banks of the Kolochu to a place called Tsena in Thibet. It is used by Thibetans who come to trade at Dewangiri and to visit the shrine of Hazoo. Tsena is nearly certainly the same place as was mentioned to me by a Towang man as the first town in Thibet, viz. Tena-zong. In all probability I shall get a good deal more information regarding this route when I next visit Dewangiri.

Tassgaon to Towang. 56.

1. PANGSAM.—A bridge over a river; one day.
The road ascends and descends, and then down to a big river by a steep descent; laden mules go by it.
2. MOOKTANKA.—One day.
An ascent the whole way to the Onsa La, which is crossed. This is a deserted village; the road is good and practicable for mules.
3. PARBOKSAM.—One day.
Road pretty level; mules can travel it. Small village.
4. ONSA LA.—One day.
The road ascends very steeply the whole way. Snow falls in this pass; no village; cross no stream.
5. ROLAM.—One day.
Descend the whole way; the road is good. A deserted village; cross no stream.
6. YIEBFE.—One day.
Road good and level; cross no stream; mules can go.
7. DUKTI.—One day.
Road level along a ridge; practicable for mules. Large village.
8. JAGARSAM.
Road descends gradually to the Dangmechu, a large river, whose source is not far off; scarcely traversible for mules.
9. SHANGYA.—One day.
Road level along left bank of Dangmechu; practicable for laden animals. No village.
10. BOMJA.—One day.
Road level along left bank of Dangmuchu; passable for mules. A village.
11. TOWANG.
The road ascends steeply the whole way. A fort.

II.—BRIDGES.

The innumerable streams which intersect Bhutan in every direction, most of them unfordable, make any information which can enlighten on the structure of bridges in this country of peculiar importance; more especially as I am not aware that our knowledge of the science of military bridges would enable us to improve on the structure of, or the position chosen for, the bridges of the Bhuteahs. In truth, the people of Bhutan would appear to be peculiarly skilful in this art; and it may be doubted, reference being had to facility of construction, strength, and simplicity of design, if the treatises of Douglas or Haupt could furnish more apt plans than are found every march in Bhutan. Thus, then, though ignorant of the bolts and nuts and screws of civilized bridge-making, the Bhuteahs manage by having resort to the magnificent trees which grow on the banks of each of the torrents and to the cane tendrils which entwine themselves round them. In the opinion, therefore, that for the purposes of warfare in this country the Bhuteah bridges are the best, I offer all the information regarding the mode of constructing them that I have been able to collect. There are six kinds of bridges in use in Bhutan; first the chain suspension; second, a combination of pier and lever bridge; third, the common wooden spar bridge; fourth, the cane suspension; fifth, the basket-bridge; sixth, the trestle bridge.

With regard to the first, the very complete and detailed description of it which is contained in Turner's Bhutan relieves me from the necessity to describe it further. This style of bridge is only used over the largest rivers, and partakes of a too permanent nature to be of much use on account of the delay which would ensue in its construction. The second description is that which is also adapted to large streams, and though the heavy masonry piers which are constructed for its erection would seem to make it of too tedious construction, yet, from the difficulty which there would be in destroying these embankments, I think a force would be pretty safe to find these intact, whatever might have been done to the roadway.

Having selected a sufficiently narrow spot, a beam is placed with its end projecting over the pier, and its end is either weighed down with stones or tied down; another beam is in the same manner projected thus, and so on beams are laid from either side projecting beyond each other till a sufficiently narrow space is attained to enable a spar to be laid down. They are enabled in this manner to construct bridges of 100 feet span and upwards. There is a method of strengthening this bridge by combining the suspension with it and throwing canes under it to take the strain off the centre.

The common spar bridge is used for streams requiring some 20 to 40 feet span, and consists in nothing more than throwing over trees of the required width, fastening their ends and centres, and throwing over a roadway of earth.

Suspension bridges of cane usually exist across the large streams, where there is not much traffic, and they do not differ from those used in other frontiers, in Nipal, Sikkim, the Abor and Cossyah Hills.

The basket-bridge is also common in the Himalaya, and indeed in all wild mountainous countries, such as the Andés. It consists of two strong ropes "made of twisted creepers stretched parallel to each other and encircled with a hoop or a basket. The traveller who wishes to cross over from hence has only to place himself between the ropes, and sitting down, seizing one rope in each hand, by means of which he pulls himself along."

Sometimes the traveller is seated in a basket or across a bit of stick, and either pulls himself across or is pulled by a rope attached to his seat from the other side.

Eden mentions another means of crossing rivers in practice,—by means of a triangular raft of bamboos, consisting of a series of triangular platforms of bamboos placed one above the other; the apex of the triangle being kept up stream, and the raft being pulled backwards and forwards by gangs of men, the common cane being used instead of rope. At the point on the Teesta where this was used, the river was 90 yards wide, and the stream ran at the rate of ten miles an hour, both of which circumstances are worthy of note. Such is a description of the various bridges in use in Bhutan. With this knowledge of how they are made, and the practical aid of a few Bhuteahs or Lepcha coolies, a force ought never to be stopped long at any stream.

J.—FORTS.

Before proceeding to such information of the forts and defensible places in Bhutan, I may state generally that the word "zong," which we have translated by fort, is only applied to those residences of the officials of Bhutan which rise something beyond the level of mere houses, and therefore wherever the word "zong" is postfixed to any name of a place, a defensible post may be looked for. The word "chang" is applied to the houses of the third and fourth rate officials, which are merely double or treble storied houses, without any other pretension to fortification than the thickness of the walls and the existence of a few loopholes and projecting balconies can give it. I will endeavour to give the most exact description possible of the places where forts or zongs are.

Punakha or Puna-zong, then, is the first to be described. We are lucky in having very fair information of this place. Turner, who was the first who visited, and in whose book is a sketch which was repeatedly recognised by various Bhuteahs to whom I showed it, says: "The palace of Punakha in its exterior form and appearance very much resembles that of Tasichozong, but is rather more spacious, and has in the same manner its citadel and gilded canopy. It is situated on the point of a peninsula washed on either side by the Mochu and the Pochu." This officer was jealously refused entrance, so that he is unable to give an account of its interior. Pemberton does not say anything about it, but from Griffiths we learn that "it is situated on a flat tongue of land by the confluence of the Pochu and Mochu rivers. To the west it is quite close to the boundary of the valley, the river alone intervening; it is upwards of 200 yards in length by perhaps 80 in breadth. Its regal nature is attested by the central tower;" and in describing their entry into the palace, he adds that they crossed a bridge over the Pochu defended by some wretchedly constructed wall pieces; they then entered a paved yard and thence ascended by some most inconvenient stairs to the palace, the entrance to which was guarded; they then crossed the north quadrangle, which is surrounded with galleries and apartments, and ascending some still more inconvenient or even dangerous stairs they reached a gallery, along which they proceeded to the Deb's room, which is on the west of the palace. The room into which they were shown was a good sized one, but rather low, supported by well ornamented pillars tastefully hung with scarfs. He mentions also having been received at another time in an upper room of the central quadrangular tower.

Eden says regarding this palace, after describing its situation, which does not differ from the above accounts;—he says both the rivers (Pochu and Mochu) are deep and somewhat swift: "The palace is built on the regular standard plan, a rectangle enclosed a court-yard, in the centre of which is a six-storied tower. The building is not to be compared with Paro; it is a shabby, mean, tumble-down pile, very dirty and ill-kept. On the west side of the palace, raised above the other buildings, is the residence of the Deb; in the centre tower lives the Durma Rajah; on the east live the Governor of the fort and the amla. There are two entrances to the precincts of the palace by bridges across the rivers." But the most valuable description is that given in the plan of the palace by Captain Austen.

Tasichozong.—Turner, who is the only European who has ever visited this place, thus describes it: "The castle of Tasisudon stands near the centre of the valley, and is a building of stone of quadrangular form. The length of the front exceeds that of the sides by one-third, the walls are lofty, and, as I conjectured, upwards of thirty feet, and they are sloped a little from the foundation to the top; above the middle space is a row of projecting balconies, below the walls are pierced with very small windows, which I judge to be intended rather for the purpose of admitting air than light. There are two entrances in the palace,—the one facing the south is by a flight of steps beginning on a level with the ground on the outside and rising to the more elevated terrace within, the whole being comprehended within the thickness of the wall; the other grand entrance is on the east front, which is ascended by a flight of stone steps. Even with these we entered a spacious gateway having two massy doors, fortified with knobs of iron, which stand above the surface of the wood; a large timber sliding within the masonry serves to secure them when shut. We passed through this gateway and came opposite to the citadel square building, the residence of the Dharmah. Both to the right and left the way leads to spacious squares, paved with flat stones and to the apartments of the Llamas. The citadel is connected with the western angle, and there is a communication from the verandah that adjoins it. The citadel is a very lofty building, having no less than seven stories, each from 15 feet to 20 feet; it is covered with a roof of low pitch, composed of fir timbers sheathed with deal boards, which project on each side a great way beyond the walls. We found the eastern, western, and southern angles, exactly corresponding with each other, in having apartments on the ground floor appropriated for depositing all kinds of stores. A covered gallery runs all round them, beneath which are subterranean places serving for kitchens. A range of good rooms with boarded floors on the first story accommodates all the officers of state, and these again are skirted by a deep verandah supported by a row of handsome pillars. Over this story is a sort of terrace of cement, with rooms more roughly finished, only covered by the roof, which is constructed in the usual manner of cross beams of fir resting on upright posts and planks of deal placed on them with large stones to keep them down. These beams are supported high above the walls, and project beyond them. The north square is in appearance a very confused assemblage of apartments." This account is the more valuable, as it is the only one which exists, and the two excellent sketches of the place which accompany make it still more so.

Paro.—This is the strongest place in Bhutan, and it is lucky that our accounts of it are very ample. "Paragaon," says Turner, "is constructed, and the surrounding ground laid out, more with a view to strength and defence than any place I have seen in Bhutan. It stands near the base of a very high mountain; its foundation does not decline with the slope of the rock,

but the space it occupies is fashioned to receive it horizontally. Its form is an oblong square. The outer walls of the four angles near the top of them sustain a range of projecting balconies at nearly equal intermediate distances, which are covered by the fir eaves that project as usual high above and beyond the walls, and are fenced with parapets of mud. There is but one entrance to this castle, which is on the eastern front, over a wooden bridge so constructed as to be with great difficulty removed, leaving a wide and deep space between the gateway and the rock. Opposite to this front are seen on the side of the mountain three stone buildings, designed as outposts, placed in a triangular position. The centre one is most distant from the place, and about a double bowshot from those on either side as you look upon them. The centre building, and that on the left, defend the road from Tasichozong, which runs between them; that on the right of the road, from Buxa Dwar and the passage across the bridge. On the side next the river, from the foundation of the castle, the rock is perpendicular, and the river running at its base renders it inaccessible. The bridge over the Parchu, which is at no great distance, is covered in the same manner as those of Tasichozong and Punakha, and has two spacious gateways."

Eden also gives a very detailed account of this fort, whose strength appears equally to have struck him. The fort of Paro is a very striking building, and far surpassed the expectation we had formed of anything we had heard of Bhuteah architecture. It is a large rectangular building surrounding a hollow square, in the centre of which is a high tower of some seven stories, surmounted by a large copper cupola. The outer building has five stories, three of which are habitable; the other two lower, being used as granaries and store rooms, are lighted with small loopholes, whilst the upper stories are lighted with large windows, opening in most cases into comfortable verandahs. The entrance to the fort is on the east by a little bridge over a narrow ditch; the gateway is handsome, and the building above it much higher than the rest of the outer square. The gate of the fort is lined with iron plates. On entering the court square you are surprised to find yourself at once on the third story, for the fort is built on a rock, which is overlapped by the lower stories and forms the ground base of the courtyard and centre tower. It would be necessary to bear in mind, in the event of our having at any time to attack this fort, that shot directed anywhere lower than the verandahs would go through the store rooms and be stopped by the rock. After passing through a dark passage, which turns first to the left and then to the right, a large, well-paved, and scrupulously clean courtyard is reached. The first set of rooms is devoted to domestics. Beyond these rooms is a small gateway, and the first set of rooms on the left hand belongs to the ex-Paro Penlow; they are reached by a very steep and slippery staircase opening into a large hall, in which the sepoys mess. Beyond the hall is the Penlow's state-room; it is somewhat large. But though of great size, it is really very striking, and very tastefully decorated. The walls of the fort are very thick, and built of rubble stone, and gradually sloping from the base to the top. If the frame work of the windows were knocked away, the building would quickly crumble to pieces. Above the palace are six smaller forts, intended to act as outposts, but really they command the fort itself most completely. Any force in possession of these forts would have the palace completely at its mercy. One of them is a curious building, formed of two semi-circles—one large, the other small—built up one against the other for about five stories high. The Bhuteahs are well aware that these forts command the palace. The name of the round tower is Tahzong; next to that is Donamozong, then Tukzong, then

down to the Sis Gyanslazong. The two upper ones, which are some way up the hillside, are Soorizong and Phebeerzong.

ANGDOPHORUNG.—This place is the residence of the next most powerful Chief in Bhutan after the Penlows of Paro and Tongsa. The fort is described by Turner as "a most respectable object, towering high up on the narrow extremity of a rock which stands between the Mochu Pochu and Tanchu, both of which streams unite at its sharpest point." He then goes on to speak of the good judgment which dictated the selection of the place, "as its situation, both for strength and beauty, is superior to every other that offered. It stands on the southern extremity of the narrow end of a rocky hill which is shaped like a wedge; it is an irregular lofty building of stone, covering all the breadth of the rock as far as it extends. The walls are high and solid; there is but one entrance in front, before which lies a large space of level ground, joined by an easy slope on the north-west to the Punakha road. About 100 yards in front of the castle rises a round tower on a high eminence, perforated all round with loopholes, and supporting several projecting balconies. It is a very roomy lodgment, has a commanding position, and prevents the castle from being seen, even at a small distance. The hill of Angdophorung is completely covered with a fine even turf; it has a moderate aclivity as it increases in breadth for about one and a half miles from the castle, where it joins the side of a very lofty mountain.

TONGSA.—Pemberton gives no account of this or any other place in Bhutan, and all we have to trust to besides natives' accounts is that of S. Griffiths, who seems not to have been very favorably impressed with it. "Tongsa, although the second, or at any rate the third place in Bhutan, is as miserable a place as any body could wish to see. It is wretchedly situated in a very narrow ravine drained by a petty stream; on the tongue of land formed by the torrent Mateechu, 1,200 feet below, the castle stands. The fort is a large, rather imposing building, sufficiently straggling to be relieved from heaviness of appearance. It is so overlooked, and indeed almost overhung, by some of the nearest mountains, that it might be knocked down by rolling stones upon it. It is defended by an outwork 400 feet above the castle.

CHUKA.—Turner thus describes this place: "The castle of Chuka makes a very respectable appearance. It is a large square building placed on elevated ground; there is only one entrance to it, by a flight of steps and through a spacious gateway of large heavy doors. It is built of stone, and the walls are of a prodigious thickness." Griffiths says—"It is a place of some strength for forces not provided with artillery, and commands the pass into the interior very completely."

DURBEE.—There is also a small fort at this place, which is thus described by Turner, who passed by it: "It is built on the crown of a very steep rock which is washed by the Tchinchu, over which is thrown a bridge. Half way up the rock stands a square tower with a bamboo bastion to defend the approach to the castle, which is gained by an exceedingly steep ascent."

DALAIZONG—Is described by Turner as a "a building square on one side and semi-circular on the other, on the very summit of a high hill." Eden merely mentions its existence.

DUKKA OR DOJEZONG.—This is said by Turner to be a "a fortress built on the crown of a low rocky hill which it entirely occupies, conforming itself to the shape of the summit, the slope all round beginning with the foundation of the walls. The approach to the only entrance is defended by three round towers, placed between the castle and the foot of the hill, and connected together by a double wall, so that a safe communication is preserved between them even in times of the greatest peril.

Around each of these towers, near the top, a broad ledge projects, the edges of which are fortified by a mud wall with loopholes, adapted to the use of the bow and arrow or muskets. On the north are two round towers that command the road from Thibet; on the east the rocks are rough and steep, and close under the walls; on the west is a large basin of water, the only reservoir I had yet seen in Bhutan. The castle is a very substantial stone building with high walls, but so irregular in figure that it is evident no other design was followed in its construction than to cover all the level space upon the top of the hill on which it stands. Having ascended to the gateway at the foot of the walls, we had still to mount about a dozen steps through the narrow passage, after which we landed upon a semi-circular platform edged with a strong wall pierced with loopholes. Turning to the right we passed through a second gateway and went along a wide lane with stakes for horses on each side. The third gateway conducted us to the interior of the fortress, being a large square, the angles of which had three suites of rooms. In the centre of the square was a temple dedicated to Mahamoonee.

TASSGAONG or BENKAZONG.—Griffiths appears to have been much struck with the strength of the natural position of this place. "Tassgaon," he says, "is a small place situated on a precipitous spur 1,200 feet, below which on one side the Monass roars along, and on the other a much smaller torrent. From either side one might leap into eternity. The place itself is the Gibraltar of Bhutan, consisting of a few poor houses much together, and the defences consist of a round tower of some height, and a wall which connects the village with the tower, and on the opposite side of the forest there are other defences of towers and out-houses." A released prisoner, who had been taken on the retreat from Dewangiri, states that he saw no fort at this place, but the very meagre account of the roads and places he passed over induces the belief that he could have looked about him very little. All my Bhuteah informants have stated that there was what they called a zong at this place; that it is a litttle bigger than, but of the same description as, Chuka. The walls are said to be four feet thick, some thirty feet high, and the house or fort is three storied, with balconies looking to the outside and a temple in the centre. There is only one door, and it is loopholed. The Monass runs to its north and north-west, and a small stream on its west and south-west. It is commanded from a hill on its south. There are some houses situated above it, and below it there is a sort of market-place. The road from the north and the Dewangiri join each other at this market. The water-supply comes from a small stream which runs close past its north-west angle and falls into the Monass.

TASHANGTSI—Is described by Griffiths as "a large quadrangular building," and he adds "on the same side there is a tower several hundred feet above the Soobah's house, and there is also a small one on the same level." I have been informed that this building has fallen down, and that there is now only a large house there.

LINGTSI.—All that Griffiths says is, that the fort is "a large rather irregular building." My information is that this is a fort of the same nature, but larger than Chuka. There is only one entrance at the south-west side, to which stone steps lead up: the village is also situated in this direction, something under a quarter mile off. There is a temple in the centre, and the walls are loopholed, and there is a large varandah window at each side, one being immediately over the doorway. The water-supply comes from a small spring some 100 yards below the western corner. It is commanded by a hill to the north.

Beyaka.—Of this place Griffiths says : "The castle of Beyaka is a very large irregular straggling building, situated on a hill 500 feet above the plain, some of its defences or outworks reaching nearly to the level of the valley. During the hot weather it is occupied by the Tongsa Penlow." And this agrees with my information, which makes it a sort of oval building with walls 30 feet high loopholed. The dwelling places are in three stories. In the centre is another building. There are two doors; one to the east, and one to the west. It is commanded to the north-west by a hill, and also by an outwork, a circular tower, which is connected with the fort by a wall. The water-supply is to the east from a small spring below the fort; it is defended by another outwork, which is also connected by a double wall with the fort.

Jongar.—This is a circular building, with the residences of the inhabitants situated all around. The walls are 30 feet high, loopholed, and supplied with balcony windows. There is only one door, to which steps lead; the steps are covered in. The water-supply is from a small spring on the east of the fort and above it. It could easily be cut off.

Hah.—Of this place Eden says: "The fort is a very pretty little four-storied building, covered as usual by a smaller outpost higher than itself, and above 80 yards distant." There is only one door to it; the walls are loopholed, and there are windows with the usual projecting balconies.

Doona.—This is a fort of the second order, about fifty by thirty feet. The walls are thirty feet high and loopholed. On the long side are five windows, and on the other two. To the north-west there is an outwork, two storied and about thirty-five feet square, which is situated on higher ground and commands it.

Besides the above, of which we have some sort of account, there are others, which will appear in the following list, which I give to show at a glance the relative importance of each.

First class, zongs or forts.

(1) Paro; (2) Tasichozong; (3) Punakha; (4) Angdophorung; (5) Tongsa.

Second class, changs, large defensible houses.

(1) Tassgaon; (2) Tashangtsi; (3) Lingtsi; (4) Beyaka; (5) Jongar; (6) Jemgaon; (7) Telagaon; (8) Tagana; (9) Chuka; (10) Doona; (11) Hah; (12) Sangbi; (13) Lingjee; (14) Gasse; (15) Dojezong; (16) Dalaizong; (17) Durbee, and formerly Dalingkot and Dhamsong.

Third class, smaller defensible houses.

Saleeka; Damiestsi; Mongar; Giesa; Boomdangtang; Kenka; Cheerung; Piaregaon; Simtoka; Chapcha; Bedeka, and formerly also Buxa—Bishan Sing.

In addition to these there are numerous monasteries scattered all over the country, which are more or less defensive.

The following is a list of those in Western Bhutan given me by an intelligent "Geelong," which I offer for whatever it may be worth. I have been unable to get a list of those in Eastern Bhutan, as just as I was prepared to do so from the Gowohama of Yangla I was attacked with fever.

Return showing Monasteries in Western Bhutan.

Number.	Jurisdiction.	Name.	Situation.	Number of Llamas.	Remarks.
1	Paro	Limchee	Above Dojezong	60	
	ditto	Tashaka	Between Paround Doje ...	100	
	ditto	Tashechamo ...	Ditto ditto ...		
	ditto	Bomta	Between Paro and Piela ...	20	
5	ditto	Tsangchechuko ...	North of Paro	100	
	ditto	Chumpoo	At source of Tsulchu	40	
	ditto	Shiretango	Near Tsangchechuko ...	40	
	ditto	Kee La	On the Chi La	20	
	ditto	Gore	Below this	100	
10	ditto	Zache	,, towards Paro	60	
	ditto	Zondaka	Between Chi La and Hah ...	40	
	ditto	Ooje Gooroon ...	,, Hah and Paro ...	60	
	ditto	Giaba	Beyond the Loome La... ...	60	
	ditto	Genda	Above Pisong	30	
15	ditto	Chindoo	,, Onaka	60	
	ditto	Gelee	Below the Loome La	70	
	ditto	Dongala	Above Eu-ana	50	
	ditto	Eutoo	Between Dongla and Paro ...	20	
	ditto	Hefu	,, Paro and Tassisudon ...	60	
20	ditto	Sikee	,, Doga Sam and Parchu ...	40	1,120 Llamas.
1	Tasichozong... ...	Cheree	Above Dotena	80	
	ditto	Taoloong	Near this	40	
	ditto	Tangoo	Below Cheree	100	
	ditto	Rango	,, the Tchinchu La ...	30	
5	ditto	Shashoo	Above Panri Sam	20	
	ditto	Piakakom	,, Tasichozong	20	
	ditto	Dodeta	Near ,, ...	80	
8	ditto	Den	Above Dodeta	40	
4	Puna	Ramjee	Near Siola	30	
5	ditto	Sidla	... ...	100	
	ditto	Namgetsi	Near Siola	40	
	ditto	Chentennyempo ...	Below the Tchonchu La ...	80	
	ditto	Biachukam	Near Punakha west	20	
	ditto	Seka	Ditto ditto	30	
10	ditto	Gofoo	Below Seka ...	30	
	ditto	Tab	... ...	100	
	ditto	Dalinda	Below Talo	60	
	ditto	Benga	Above Nobgaon	40	
	ditto	Nabgaon	... ...	140	
15	ditto	Lapsaka	Between Telagong and Nobgong ...	40	
	ditto	Chuzo	Above Mendagaon	40	
	ditto	Tomba La	South of Mendagaon	60	
	ditto	Gurchee	Between Siola and Tsa-chu-foo ...	60	
	ditto	Punazong	... ...	500?	
20	ditto	Pebulan La	Above Shegana	20	1,510
1	Angdophorung ...	Gantee	Below the Pele La	180	
	ditto	Kota	Ditto ditto	100	
	ditto	Deshephorung ...	Near Santagaon	60	
	ditto	Tanchu ...	Above Reetang	60	
6	ditto	Dole	South of Reetang	100	
	ditto	Petoka	North of Santagaon	140	
	ditto	Phalen	Above Phalen	80	
	ditto	Peecheua	,, beafoo	50	
	ditto	Pensena	Ditto ditto	40	
10	ditto	Niesegaon	East of Angdophorung ...	100	
	ditto	Lamckiseka	Between the Dokien and Hinle La.	60	
	ditto	Koojoo La	Below this to the east... ...	50	
13	ditto	Piana	Near the source of Nahi Loom ...	40	
9	Tassisudon	Toojeta	Above the Pome La	40	
10	ditto	Phojodi	Between Pome La and Tasichosong.	160	
	ditto	Kepse	Below this	40	
	ditto	Chungotse	Ditto	30	
	ditto	Pome La	At the pass of that name ...	20	
	ditto	Naobree	Above Tseluna	30	
15	ditto	Tada	,, Paka?	140	
	ditto	Tashi	... ...	100	
	ditto	Thlangso	... ...	80	
	ditto	Taloka	... ...	120	
	ditto	Simoo	... ...	60	
20	ditto	Dato	Above Simo	80	
	ditto	Dome	Near Tseluna	40	
	ditto	Gensaka	... ...	40	
	ditto	Kupa	Beyond Simoo towards Bisfoo La...	60	
25	ditto	Kensandichen ...	Above Sisona	60	
	ditto	Pee	Below Kapa	80	
	ditto	Samdo	At source of Chandu Chu ...	30	
	ditto	Langa	Above Langoka	60	
	ditto	Panga	,, Panga	120	
	ditto	Tsamra	Above Checkoka	60	
30	ditto	Rheua	Source of Tamchu	60	
	ditto	Dokachi	Above Chapcha	200	
	ditto	Tashchum	,, Lomyeka	30	
	ditto	Chapcha	,, Chuka	20	
	ditto	Piah Kapa	Near Dokien La	30	
	ditto	Seme	Above this	20	
36	ditto	Pulcha	Near Telagong	30	2,220 Llamas.

Number.	Jurisdiction.	Name.	Situation.	Number of Llamas.	Remarks.
1	Puna	Sapee	Above Gassezong	40	
2	ditto	Gnase	„ Rinchu	60	
3	ditto	Tsefoo	„ Gienshari	40	
14	Angdophorung ...	Shawa	Below source of Nabi Loom ...	60	
15	ditto	Tana	At ditto ditto ...	40	
	ditto	Touche	Near this	40	
	ditto	Sasse	Above Sasseka	80	
	ditto	Sapte Churee ...	„ this	60	
	ditto	Gamfi	South of this	60	
20	ditto	Jouselo	Between Gamfi and Sasse ...	100	
	ditto	Sinshutoka	Above Hesoka	60	
	ditto	Piana	„ Doma	100	
	ditto	Yajee	South of this	60	
24	ditto	Kauzachenleen ...	Near Doma	60	1,780 Llamas.

Besides these places, the large houses peculiar to Bhutan, which are to be found in every village in the interior, offer facilities for resistance. They usually consist of, first, a basement floor, where pigs and filth have their abode; a second, where the servants and hangers-on stay; a third, for the head of the house; and lastly an open story reaching to the roof, where wood and such like is stored. The walls of these buildings are very thick, from eight to ten feet at the base, and from three to four feet at the top. They are oblong in shape, and have three to four balconied windows, which project beyond the walls on the long side, and one on the other side; they are loop-holed usually below the line of windows. The only means of access to them is by a long ladder, which can of course be easily removed. Their roofs are made of fir shingles, and are very inflammable. Altogether a resolute body of men, who would make the most of the means at hand, might make a very pretty fight of it in one of them against a force unprovided with artillery.

Such is an account of the permanent buildings in Bhutan which are capable of being turned to account as means of defence, but as the country abounds at every step in defensible positions of the very greatest strength, and the Bhuteahs are very apt in running up stockades and breast works, I will before leaving this subject say a few words as to the construction of these. These stockades vary much in shape, size, and material, which last usually depends on what is at hand, and as I have seen perhaps as many of these as any one, I may as well describe some of them. At Bala, then, the Bhuteahs, on the occasion of their coming into the bed of the river, erected broad stone breastworks; these were merely walls some five feet at bottom and two feet at top, and four to five feet with small embrasures at intervals, and open in the rear. These were placed across the gorge to debar the passage. Such works to a front attack are fairly strong; the mountain train guns had no effect on them, and as the defenders lay close, shells were not of much more use; yet, as the hearts of their defenders were not of such obdurate material as their walls, a quick advance in open order would soon have carried them, to say nothing of their being open to flank attacks. There is another kind of field-work erected by the Bhuteahs, namely a stockade, square, with sides of various lengths, surrounded by a palisade of bamboo or trunks of trees placed close together and stuck into the ground. Inside, and to the height of five feet, another row of stakes is planted, and then loose earth is jammed down. Now this stockade is quite impervious to any shot which a mountain gun can send, and if it strikes the upper portion it merely goes through, scarcely damaging the up-rights at all, and shells do very little more damage, as inside the stockade the earth which

is taken away to form the embankment leaves a deep trench all round, in which the defenders can lie close. Another description of stockade is thus constructed: a row of large timbers, 12 feet in height and some four feet apart, are fixed firmly into the ground, and at five feet distance another row is planted inside; then between the two a stone wall composed of enormous boulders is erected. Loopholes are left about four feet from the ground, and from six to ten feet apart all round; another row is left about 10 feet from the ground and is used by means of a platform erected at that height. In addition some openings are left in the tops of the walls at intervals, and then a sort of machicolet projections are erected to serve to give flanking fire. There is only one doorway to this. Another curious work which the fancy of the Bhuteah Generals indulged in was a wall built in the shape of a horse shoe, with the toe to the front, and another smaller wall of the same shape, built inside, at the distance of four feet; what could have been the object of such a structure is hard to say. In addition they erect breast-works at likely turns of the road, cut ditches across them, or else cut the road away altogether. Though these stockades are doubtless in themselves formidable enough, they are seldom well placed; Bhuteahs in this respect not being more successful than more civilised warriors in choosing hill positions, these being usually commanded, liable to be cut off from water, &c. There is another thing to be noted in the construction of these stockades viz. the very defective loopholes, which are usually placed with the broad end outermost, and it is to be remarked that even in the largest stockade the amount of fire that can be brought to bear on any one point is at a minimum; in fact so defective are their arrangements for delivering a fire unexposed, that in attack I should consider that every shot they were enabled to fire pointed to something wrong in my own arrangements. A few good cool shots would keep down all fire, and I have before remarked that their loopholes are all but useless to repel an assault. On the mode of attacking these works, I will speak at another place.

K.—THE CLIMATE OF BHUTAN.

Experience has proved that great losses are sometimes occasioned from a want of a previous knowledge with the climatic peculiarities of a country in which an army is for the first time operating. It is a source of regret, therefore that our information on this important point can but be regarded as very meagre and inaccurate, arising as it does from the recorded experience of the three missions who visited the country, and none of whom stayed any length of time. Dr. Griffiths is the only officer of all who visited it who has attempted any description of the climate, and he says: "Of the climate, which is necessarily so varied, it would be useless to attempt to give an account. Indeed the only two places of the climate of which the mean could be given even for one month are Tongsa and Punakha. The mean for the month of March at Tongsa may be estimated at 56° 3'; the maximum heat between the 6th and 21st being 63°, and the minimum 51°. I have elsewhere stated the result of the observations made at Punakha. Throughout the barren portions of the country, which are generally limited to inconsiderable elevations, the heat must no doubt be great during the summer months. At Punakha in April the sun was found very incommoding after 9 A.M., and as a proof of the heat at such elevations as 7,000 feet on some places, I may re-advert to the culture of rice at that and above Tongsa. The ravines are, however, very narrow about this place, and the faces of the

mountains on which the cultivation occurred had a western aspect. In very many places, however, more abstracted from the influence of a radiated heat, delightful climates may be found. It is curious, though not singular, that the best situations were always found occupied by Geelong villages. Considerable elevation, in addition to other minor causes, is requisite at least for a Bhuteah during the summer months. Thus the Geelong villages are rarely seen under 8,000 feet, and oftener about 9,000 feet, and the Chiefs find a summer change of residence necessary, during which they repair to elevations varying from 7,000 to 9,000 feet * * * *

The most delightful climate we experienced was that of May at Chapcha, which is situated on the steep face of a mountain with a south-west aspect. Yet the temperature ranged from 46° to 51° a week afterwards, and we were exposed to the unmitigated fierceness of a Bengal sun at the hottest time of the year. The most disagreeable part of the climate of Bhutan exists in the violence of the winds, more particularly in the valleys. The direction of these winds, which are very gusty, is invariably up the ravines, or contrary to the course of the draining torrents, no matter what direction these may have. The winds are more violent throughout the lower tracts than elsewhere, and as in many of these places they are enabled to supply themselves with dust, they often become very positively disagreeable, and formed no inconsiderable part of the annoyances we were subjected to during our residence at Punakha. The partial winds are frequently so violent as to unroof the houses * * * * *

We were not much incommoded by rain, neither should I consider it to be abundant throughout the lower elevations; at least no part of the vegetation "I saw in such tracts seemed to indicate even a small amount of moisture." The meteorological table given by Pemberton which extends over from the 2nd January to the 20th May, and the few remarks which Turner makes, would tend to show that great heat is never experienced at all; the greatest being evidently at Punakha and in other low confined valleys and the beds of streams; yet this table affords evidence towards one curious fact, namely, the apparently remarkable equibility of climate in lower and Central Bhutan. The observations extended, as above mentioned, from the 2nd January to the 20th May, a period which includes not only the hottest, but also the coldest part of the year, and they were taken at every variety of elevation, in the low beds of the streams and on high and exposed ridges from 1,000 to 12,500 feet, yet the thermometer never appears to have fallen below 40,° or to have risen above 83°. And it is to be observed that the mean temperature of the lowest place in the warmest month was 83°, while that of the highest elevation in the coldest month was 49°. The following table, extracted at random from that of Pemberton, will I think prove this:—

At Buxa,	height	1,809	feet in the month of	May,	the temperature was	83°
„ Dwangiri	„	2,150	„	„	January	„	62°
„ Murichom	„	3,788	„	„	May	„	64°
„ Tongsa	„	6,527	„	„	March	„	56°
„ Chapcha	„	7,984	„	„	May	„	56°
„ Bomdangtang	„	8,668	„	„	February	„	49°

Yet I by no means wish to say that there is only a very slight difference between the climate of lower and Central Bhutan, for coupled with the greater heat, the lower and exterior ranges have the peculiar damp, enervating climate of Bengal, while in Central Bhutan, though the temperature is decidedly, yet not extraordinarily, lower, we have Turner's authority for saying that the season of the rains is said to be remarkably moderate. In

the interior of Bhutan there are frequent showers, but none of those heavy torrents that accompany the rains in Bengal, and consequently I think we may with justness assume that the relaxing dampness is succeeded by an altogether more bracing climate. Thus, notwithstanding the not very great difference in temperature noticed above, it is probable that the change in the feel of the climate must be very remarkable. The enervated and dormant powers of body and mind in the lower ranges would be succeeded by vastly more vigorous life and braced energies in the interior. With regard to the point at which a sensible difference would be felt in the climate, I should imagine that a line drawn east and west from Chapcha would divide the differences. And again I fancy that beyond the line of Punakha, towards the frontiers of Thibet, the climate would be found to partake largely of the arid, bleak, and inhospitable nature of that of the Thibetan table-land; indeed we have Turner's authority that such is the case. In the interior of Bhutan the seasons can only, I should imagine, be divided into the hot and cold; the first extending from the 1st April to 1st October, the hottest period being from the 15th May to 15th July; the latter from 1st October to 1st April, the coldest portion being from 15th December to 15th February, snow falling at low elevations during this period. The fall of snow in Bhutan may be said to commence in the higher ranges at the latter end of November and beginning of December, and during the last month coming down as low as 5 and 6,000 feet. It does not, however, appear to lie below 8,000 feet, and from that elevation to 10,000 only in sheltered places. Beyond 10,000 it lies in considerable depth on the tops of the ridges, which may at this elevation be said to be permanently covered from 15th December to 1st March. With regard to the exterior ranges, the seasons can only be divided into the cold and rainy; the first extending from 15th October to the 15th April, the last from the latter date to the former. Dr. Griffiths mentions, as one of the peculiarities of the climate of Bhutan, the prevalence of violent winds in the valleys, and certainly my little experience of the country fully bears this statement out. These winds appear to blow up the valleys in the daytime and down at night. Those who were at the camp at Bala, opposite the funnel-like gorge of the Toorsa, will well remember these winds, and I have also remarked the same at other places in Bhutan, as Dewangiri, Murichom, Cheerung, and Bagh Dooar; and I remember Major Lumsden's saying that the Bhuteahs at Chuka warned him to get his tent in a sheltered place on account of the same kind of night wind at that place. Of the principal diseases of the country, that which appears to have struck every one by its extraordinary prevalence is a very malignant form of venereal: and if this fact is considered in relation to the shameless morality of the Bhuteah women, it is evident that in this case to be forewarned is to be forearmed.

Coughs, colds, and rheumatism, are, as might be supposed, more frequently met with than in the plains. Fevers are not frequent, and "are easily removed and seldom prove fatal. The liver disease is occasionally to be met with, and complaints of the bowels are not unfrequent." "Gravelish complaints and stone in the bladder are diseases unknown here. Small-pox is rarely seen."

In this place it is right to allude to those plagues of the outer ranges of Bhutan, leeches and *pipsees*. The first are found in swarms from the first fall of rain up to December, and the latter during nearly the whole year except for the two coldest months. It may seem strange to say so, but the bites of these creatures are really formidable, as if the sufferer is in a bad state of blood they form bad ulcers and often completely lay

him up. During the operations in Bhutan several officers, and a very large proportion of men, were laid up, and for longer or shorter periods quite inefficient from them. It was not an unusual thing to see an officer come from a jungle exploration with 100 leeches clinging to him; and to show how serious are the "*pipsee*" bites, I may mention that one surgeon seriously suggested amputation as the only remedy for the indolent slough-ing sores caused by them.

That "prevention is better than cure," was surely never more aptly remarked than in the case of leech bites; and the men should never be allowed to go about with bare legs or feet, but both should be well covered, a stocking and trowser of the closest texture, the former being carefully tucked into the latter. Besides this nothing avails, and woe be to them who trust to the defence of resplendent knicker-bocker stocking, or to the cut of the best new gaiter; they will be but bloody trophies in honor of his enemy at the end of a day in the jungles. Leeches should not be pulled off, but made to relinquish their hold, and the wound should be as soon as possible bathed in warm water. With regard to the *pipsee* bites, the best preventive is a pair of riding gloves, the best cure to let them alone.

Of the precautions that appear advisable to ensure as far as possible the health of troops operating in Bhutan, the first that presents itself is the necessity of pushing them through the deadly Terai country at the foot of the hills with as little delay as possible, rum and quinine being used as prophylactics the while. Medical authorities are, I think, also agreed as to the advisability of each man taking a "tot" of rum every day, and of his being supplied as frequently as possible with meat rations; and it is to be observed that this last indulgence proves an aid rather than a hinderance to the commissariat, as meat carries itself, and men provided with a ration of meat do not require so much flour. And every man should be provided with a warm thick blanket, 7 by 4; and as no tents could of course be allowed, it would be well if officers went round at night to see that their men had made the most of their sleeping places, for it is undoubted that of two men equally robust, he will last the longest who takes the greatest care about his sleeping place. Fires should be encouraged in the bivouacs, and the men made to sleep by them. The dress of the men should consist of a loose woollen shirt and a thick woollen *kamrband*.

These precautions would do all that could be done to preserve their health.

L.—LANGUAGE OF BHUTAN.

The language spoken by the Bhuteahs is "a dialect of the Thibetan, "more or less blended with words and idioms from the languages of the coun-"tries on which they severally touch. Along the southern line of frontier "many words have been adopted from the Bengalee and Assamese, and "on the northern the language spoken is said to approach very nearly to the "original Thibetan stock, from whence it is derived. There appear, however, "to be four great lingual divisions, known as the Sangla, Brahmee, Gnalong, "and Boundang; the former of which is spoken by the race of Bhuteahs "inhabiting the country south of Tashgaon. On the north and west to "Tongsa the Bramhee prevails, and from Tongsa west the Gnalong and "Boundang. These dialects have in a series of years undergone such modi-"fications that the several classes by whom they are respectively spoken "can with difficulty comprehend each other, an evil which is likely to increase "rather than diminish from the very trifling degree of intercourse that

"takes place between the inhabitants of different parts of the country." The above is from Pemberton, with whom I agree, except in so far he says that the inhabitants of east and west Bhutan have great difficulty in understanding each other. I think that there is very little, if any, difficulty experienced, for I found that the Sikkim Bhuteah interpreters were just as well understood on the extreme east, in the centre, and on the extreme west. While in the course of collecting the foregoing information of the country, I found the few words of Bhuteah that I knew often of the greatest service in enabling me to comprehend an expression of my information, and of course the more I learnt the greater facility in this respect I experienced. With the view therefore of placing at the disposal of any officer who may have the same work to do at some future time, I have endeavoured in the following pages to give a short grammar and vocabulary of the common vernacular Bhuteah, and in doing so I would apologise for its scantiness, which has been caused more from want of time consequent on other duties, than from lack of inclination for the work.

The Bhuteah alphabet consists of thirty consonants and four signs for vowels. The consonants are divided into eight classes, each class having four letters, except the latter, which has only two, and every consonant has its inherent vowel *a*, and is thus capable of forming a syllable of itself. The thirty consonants are in the following order, the inherent vowel *a* being pronounced as *a* in chaff, daft:—

Ka,	Kha,	Gha,	Nga.
Cha,	Chha,	Jha,	Nya.
Ta,	Tha,	Dha,	Na.
Pa,	Pha,	Bha,	Ma.
Tsa,	Tsha,	Dsha,	Wa.
Sha,	Sa,	A,	Ya.
Sa,	La,	Sha,	Sa.
	La,	A,	

Besides the vowel *a* inherent in every consonant, there are four vowels, called kikoo, dengbhoo, shabhchoo, naro.

The pronunciation of each letter appears to be as follows :—

Ka, as k in king.
Kha, as kh, in blac*k*-*h*orse.
Gha, as gh, in lo*g*-*h*ouse.
Gna, a nasal sound.
Cha, as ch in *ch*urch.
Chha, as chh in coac*h*-*h*ouse.
Jha, j aspirated, as j in *j*udge.
Nya, a nasal sound.
Ta, is the dental t.
Tha, the same sensibly aspirated.
Dha, dental d aspirated.
Na, like the English n.
Pa, like the English p.
Pha, p aspirated.
Bha, b aspirated.
Ma, like the English m.
Tsa, there is no equivalent sound in English, but the t and the s are both sensibly and equally pronounced.
Tsha tsa, aspirated.
Dsha, there is no equivalent sound, but d and s are pronounced sensibly equally, and aspirated.
Wa, like English W.
Sha, sa, have a strong guttural sound.
A, has a deep guttural sound.
Ya, like y in yoke.
Za, like the English z.
La, like the English l.
Sha, like the English sh.
Sa, like s in *s*in.
Ha, like h in *h*orse.
A, like a in father.

The vowels are pronounced thus:—

K*i*koo, as *i* in will.
Dengbhoo, as *e* in ell.
Shabhch*oo*, as *oo* in good.
Nar*o*, as *o* in robe.

The cardinal numbers in Bhuteah are as follow:—

1, Chigh.	31, So chigh.	82, Gya nyi.
2, Nyi.	32, So nyi.	90, Goo choo.
3, Soom.	40, Shichoo.	91, Go chigh.
4, Shi.	41, She chigh.	92, Go nyi.
5, Nga.	42, She nyi.	100, Gya thampa.
6, Dhoogh.	50, Ngachoo.	101, Gya chigh.
7, Dun.	51, Nga chigh.	102, Gya nyi.
8, Gyed.	52, Nga nyi.	110, Gya choo.
9, Goo.	60, Dhoogh choo.	115, Gya choonga.
10, Choo thamba.	61, Re chigh.	200, Nyee gya.
11, Choo chigh.	62, Re nyi.	300, Soom gya.
12, Choo nyi.	70, Dun choo.	1,000, Dong dhagh.
20, Niy choo.	71, Don chigh.	10,000, Thi.
21, Nyer chigh.	72, Don nyi.	100,000, Boom.
22, Nyer niji.	80, Gye choo.	1,000,000, Saya.
30, Soom choo.	81, Gya chigh.	

The ordinals are dangpo, first; nyipo, second; soompo, third; shipo, fourth; ngapo, fifth; and so on, adding *po* to the cardinals.

Parts of Speech.—These are noun, substantive, adjective, pronoun, verb, adverb, preposition, conjunction, and interjection.

The particle *nge* answers to the article "the:" for instance, *batoko nge*, the throat; *yok nge*, the business.

Gender.—Masculine nouns end in *po*, feminine in *mo*: example, *gyalpo*, a king; *gyalmo*, a queen.

Number.—The plural is denoted by adding the word *nam* and sometimes *day*, but these are left out when the notion of plurality is known from other causes.

Cases.—The genitive is known by the addition of *kyi*, *gyi*, *gi*, *yi*, *i*, but generally the vowel *i* is merely added to the noun.

The dative is known by the postposition *la*.

The accusative is the same as the nominative.

The ablative is known by the postposition *ne*, *la*, *sa*.

The instrumental by the postposition *ra*.

And the locative by *na*.

The following are examples of the declensions of nouns:—

	Singular.		Plural.	
Nom.	Khima,	*a house.*	Khim nam,	*houses.*
Gen.	Khimki or Khimi,	*of a house.*	Khim namki,	*of houses.*
Dat.	Khimla,	*to a house.*	Khim nam la,	*to houses.*
Acc.	Khima,	*a house.*	Khim nama,	*houses.*
Abl.	Khim ne,	*from a house.*	Khim nam ne,	*from houses.*
Inst.	Khim za,	*with or by a house.*	Khim nam ra,	*with or by houses.*
Loc.	Khim na,	*in a house.*	Khim nam na,	*in houses.*

Adjectives are declined like substantives, and receive the same signs of the case ; it is placed after the nouns. Example :—

Nom.	Shing Mangpo, *many trees.*	*Abl.*	Shing Mangpo nem, *from many trees.*
Gen.	Shing Mangpoi, *of many trees.*	*Inst.*	Shing ra Mangpo, *with many trees.*
Dat.	Shing Mangpola, *to many trees.*	*Loc.*	Shing Mangpo na, *in many trees.*

The plural is gained by adding the word *nam ;* other examples are— *ri-thompo*, a high hill ; *sa kampoo*, dry land ; *pomo chepo*, a fine girl, &c.

Degrees of comparison are formed thus :—The comparative by affixing *le or pe* to the positive, and the superlative is formed by prefixing *rubtoo* before the positive, as *chiempo*, great ; *chiempole*, greater ; *chiempo rubtoo*, greatest.

Pronouns.

Pronouns are declined like nouns, thus :—

Nom.	Nga,	*I.*
Gen.	Ngai,	*mine, of me.*
Dat.	Ngala,	*to me.*
Acc.	Ngala,	*me.*
Abl.	Ngase,	*from me.*
Inst.	Ngara,	*by me.*
Loc.	Ngana	*in me.*

The plural is formed by adding " *nam.*"

The others are declined in the same manner as *ken*, thou ; *kenki*, thine, *kenla*, to thee, &c. ; *phaki*, he ; *phakiki*, his ; *phakila*, of him, &c. ; *chen ngi*, thyself ; *ken ngi*, he himself ; *di*, this ; *phi*, that ; *ka*, who ; *chi*, what.

Verbs.

The infinitive is formed by adding *pa* or *wa* to the root, as *song*, go ; *songpa*, to go.

The present particle is formed by adding *e* to the infinitive, as *songpa*, to go ; *songpal*, going.

VOCABULARY.*

English.	*Bhuteah.*	*English.*	*Bhuteah.*
	A.		
To abandon,	Tanchez.	To acknowledge,	Nimphia.
Abandon,	Tanchar.	To acquit,	Maniphii shez.
Abandoning,	Tando.	To act,	Phia.
To be able,	Phia chu.	Action,	Sur.
Able,	Chu.	Active,	Yog la geppo yin.
Unable,	Mechu.	Actual,	Tampo.
To abuse,	Khamaleplap phia.	Advice,	Chophingay or tempo lapshy.
Above,	Yoge.	Affair,	Yok.
About (a place),	Narchikarong.	Age,	Lot.
About (number),	O dechick.	Alike (in appearance),	Dow.
Abrupt,	Rikhew.	Alike (in size),	Dandar.
Absent,	Narmapar.	All,	Thamche.
To accept,	Linsheyeen.	To add,	Taroonphingopar.
Accident,	Tongphu.	To admire,	Dikchú.
Account,	Tsidoo.	To admit,	Onchukle.
Accuse,	Khooreeming neampoo.	To adorn,	Zemphia.
To accustom,	Odeamphia.	Adult (man),	Tashia.

* This vocabulary was carefully gone over by Mr. Masson junior of Darjeeling, who made any corrections necessary.

VOCABULARY.—(*Continued.*)

English.	*Bhuteah.*
A.	
Adult (woman)	Murshaum
To advance	Henle agu
To have advantage	Khepsaon
To be afraid	Dootey
Again	Taroon, locktu
Accurate	Dikhay
Agent	Gosap-orfé
To aggravate	Kapchuin phia
To agree	Gong santé
Agreeable	Semgow
Ague	Dar quian
Air	Long
Alive	Zu, zamo zu
Aloof	Phiaté
Also	Dijaj
To alter	Ramaphiashe
Although	Taroon, tane
Altogether	Thamche nyampo
Always	Ontur
Amber	Pooshee
Ample	Nyampo
Ancient	Zingpo
Alone	Biembo chick
Angry	Chickosa
To annoy	Sookphia
Ant	Emuck
Antelope	Shou
Antimony	Razle
Apparent	Thondo
Appetite	Tazuka
To apply	Chuck
Apology	Ochiay ko phia
To approach	Bolo sonk
To approve	Gata
Apricot	Chu khambo
To arrive	Klepché
To ascend	
To assemble	Zomphia
To attack	Kyap
To attempt	Phia tatch
To ask	Thutch
Assistance	Rue
Awake	Mik gyong
After	Shule
Apple	Biembo
Army	Jong ma
B.	
Bag	Lidé
Baggage	Tho
Ball	Qoutok
Basket (kilta)	Chés
Basket (small)	Phinto
To bathe	Chu chukyáp
To become	Onsa
Before (space)	Dinka
Before (in front of)	Hinlé
Behind	Gyabla
Beggar	Pianlok
To beg	Simen kyap
To begin	Chedé
To believe	Lo-miniyen
Bell	Thiboo
To bend	Kon
To bind	Ta
To bite	Sor tap
Bite	Sortap
Bitter	Choom

English.	*Bhuteah.*
Blood	Kyak
To blow	Phu shé
Blunt	Neu-mindoo
Boat	Too
To boil	Kechu
Boil	Singtoo
Bone	Ritok
Back	Qyapo
Backward	Gyap
Bad	Malep
Banner	Dunda
Banquette	Thram
Barbed (arrow)	Da namcho
Bargain	Soon dill
Bark	Shing pako
Barley	Kyoh
Barren	Sa maleb
Barricade	Singchapo, chiko
Base (mean)	Pienga
Beam	Diempoo
Bear	Dhom
Beard	Giam
To beat	Dungo
Bed	Thi-men
Beetle	Nyamtik
Beautiful	Lé bé
Bee	Beung
To behave	Juche lem phia
Belly	Soo boo
To belong	Dako, yeu
Belt	Kochap
Beneath	Olé
To besiege	Tápra kor kyap
Best	Taondi lele po
To betray	Thloko tan
Betel	Gye
Between	Beema
Beware	Rigo, jun
Beyond	Phalé
Big	Bom kyam
Bird	Phia
Birth	Kiú
Black	Nakko
Blade	Kiring
Bladder	Chu ring
To blame	Kyomche phia
To bleed	Kyak zak
To bleed (cup)	Abdun kyap
To take blood or bleed	Kyakten
Blind	Mik jha
To blister	Tapshé
Blow	Dún
Blue	Hiempo
Blue (sky)	Namka
Blue (dark)	Jiangpo
To boast	Gedúm phia
A boaster	Gedúm
Body	Zu
Book	Pótí
Boot	Thláu
Bottle	Tambi
Bowl	Pobo
To break	Chiak
To break (smash to pieces)	Kyúm
To breathe	Nyechophia
Breath	Nyecho
Breed	Ruh
Bridge	Sampo
Bridge (wooden)	Sheeng sam

VOCABULARY.—(*Continued.*)

English.	*Bhuteah.*
Bridge (cane)	Tsa sam
Bridge (iron)	Cha sam
Bridle	Khrap
Bring	Basho
Broad	Piang
Brush	Phagzi
Buckle	Zhé
Bull	Lang
Bundle	Be thók
Burial	Ruh ta
To bury	Ruh phia
Bush	He dum
Busy	Yok yen
Button	Dhùlú, topghí
To buy	Neoshé
By	Dang
Both	Nyara
Box	Doom
Brass	Ragen
Breast	Piengo
Brick	Sá pá
Broom	Piam
Brother	Acho no
To brush	Sa phia
Buffalo	Mahi
To build	Khyim
To burn	Pa
To burst	Gyap
Bandage	Holak chin
Beginning	Che
To begin	Chephia
Bullet	Dau
Buniya	Tsongpe
Bit	Thrap
Boy	Piahoo
Branch	Shiaga
Brown	Sadun
Butter	Má
Butterfly	Pianla
Bachelor	Tachia
Balance	Klalu
Banker	Pioko

C.

Calf	Pho
Camp	Kiga
Care	Kie
To carry	Tuback
To cause	Tendaphia
Cause	Tenda
To cease	Tamche gau
Certainly	Tope
Change	Sode
Cheap	Kyempo
Cheese	Chu
To climb	Zé
Coat	Tago
To come	On
Come here	Shoks
To complain	Shilok kyap
Complaint	Shilok
Complaint (illness)	Nyépo
To conceal	Fa
Conduct	Tang
Content	Gaodu
Contrary	Lodi tok
To contradict	Loto
To cook	Machen
To count	Tangka kyap

English.	*Bhuteah.*
Cabbage	Cohichem
Cage	Phia khyim
Calculation	Tangka
To call	Kre kyap
Cannon	Tope
To capture	Shied
Careful	Soom
Carpet	Deyun
Carriage	Chinta kolo
Caution	Kanen
To caution	Kaneuphia
Ceiling	Gunbú
Centre	Buna
A certain (person)	Kaunba
Chain (iron)	Chata
Chalk	Saka
Chamber	Khyimchu
Chance	Qonpuchu
Change	Sodé
To give charge	Tiam
Charity	Zim
To give in charity	Zimbo tang
To chase	Dá
Chief	Lecheu
Child	Potso
Chimney	Mikon
Choice	Dam niyeu
To choose	Dammyen she
Circular	Qouto
Clay	Jasa
Clean	Kapu
Clear	Phi
Clever	Giunpe
Cloak	Charr bi
Close	Tanisa
Cloth	Jianche
Clothes	Kola
Cloth (cotton)	Kadeu
Cloud	Hompo
Club	Kas
Clumsy	Mi kang kong
Cook	Piah po
Coffin	Ruh dám
Coin	No
Cold	Kyapé
Collar	Gachun
To collect (men)	Jam
To collect (things)	Pon
Color	Tso
Colt	Tigi
Comfort	Tun lang
Command	Ka, harap
Commission	Tapche
Compact	Nyampoo
To complete	Kangbo
Conceit	Uga bóm
To confess	Tangpo láp
Contempt	Chong tong
Copy	Dashv
Correct	Tangpo
Cost	Gou
Council	Lochap
To count	Qyang kyap
Courage	Kyipo
To cover	Kap
To crawl	Kookza
Cream	Sho
Credit	Odaree
Crimson	Mapuh
Crooked	Chak cho
Cross	Giyatum

VOCABULARY.—(*Continued.*)

English.	*Bhuteah.*
Crow	Olá
Coward	Do nying chumbo
Crime	Kyom
Criminal	Kyom phako
Cruel	Dikshe
Custom	Ditum
To cut	Zam
To cry	Guo
Crowd	Mi mangpo pong
Cup (wooden)	Phopo
Cure	Takchu
Curious	Qonyo
Curtain	Yol
Carpenter	Sheengzo
Charcoal	Suna
Chicken	Pichu
China	Gyana
City	Kyongso bompo
Cooli	Tho backé
Country	Euh
Cushion	Den
To cultivate	La phia
Cultivator	Lapo
Caterpillar	Zanbú

D.

Dagger	Karson
Daily	Atan atan
Damp	Jiempoo
Dance	Chiam
To dance	Chiam kyap
Danger	Mindo
Dark	Naksoo
Dart	Dúng
Dawn	Tholé
Day	Nima
Dead	Shishu
Deaf	Endu
Dear	Gupé
Debt	Polé
Deceitful	Tanyepnepe
To declare	Tneu
Deep	Tinqringbé
Deer	Kasha
To defeat	Piohda phin
To defend	Thapra phin
To defy	Hen-kyap
Deity	Qoroo maché
To delight	Semga
Delight	Semgo
To depart	Long songe
To descend	Oté gu
To describe	Teng phin
Desire	Ko
To desire	Kophia
Design	Sem toni
To destroy	Shiko tang
Different	Ransar
Difficult	Gonyok
To dig	Ko
Direction	Ona
To discover	Sie
To disguise	Luja kyap
To dismount	Pap shé
Distance	Tha ring
Distress	Piangka
To divide	Keo shé
Doctor	Om ze
Door	Gom

English.	*Bhuteah.*
To do	Phia
Don't	Ma ya
Double	Myi tem
To doubt	Mandeo
Down	Olé
To draw	Tenshe
To draw (a picture)	Pákyáp
To drink	Tung she
Drop	Chado
Drum	Uga
Drunk	Chau razi
Drunkard	Changbopché
Drug	Shuemen
Dry	Kampoo
Duck	Damphior
Dumb	Shempoo
Dusk	Ugem pasolé
Dust	Theo
Duty	Shapshi-yoko
Dwarf	Guintúng
Dye	Tso-rue
Damage	Chou
Delay	Goi
Desert	Piétang
Deserter	Miphukhé
To delay	Goiphia
Devil	Dé
Dew	Thlapo
To dispute	Tap
To dissolve	Shi
Ditch	Tong
Dog	Khi
Doubt	Maudevod
Dress	Kola
To drive away	Dátau
To drown	Thlúm
Day's march	Myemchi sa
Descent	Oté lam
Diamond	Darji phalam
Dirty	Chokó
Distant	Thá oning
Doing	Khiakoo

E.

Eagle	Yeu
Ear	Namcho
Early	Tholé topah
To earn	Zo
Earth	Sa
Earth-wall	Zieng
Ease	Kipoo
East	Shar
To eat	Sa shé
Edge	Kí
Edge (of a precipice)	Piah-su
Egg	Yondo
To educate	Lap
Either	Yandidi yauphidi
Elephant	Laugbu
Elevation	Rimpoo
Embassy	Kompoo nia
Ember	Mín da
To embrace	Shé dikhé
To employ	Yók nou
Employment	Yók
Empty	Tougpoo
End	Myousa
Enemy	Tókú
To endure	Deo

VOCABULARY.—(*Continued.*)

English.	*Bhuteah.*
English	Phíling
Sword	Kíring
Enough	Toobé
To enter	Nangna ju
Envy	Tsi poo
Equal	Chiko
Evening	Ming eka
Ever	Ataura
Evil	Malep
To examine	Sipchephia
Experience	Yók shobé
Erect	Tangpoo
To erect	Thlou
Error	Gom yok
To escape	Ta pio
To evacuate	Tougpoo jakteepio
To endeavour	Phia she cen
Envy	Kodship
Every	Ataura
Exchange	Sodé
To exchange	Sode phia
Exercise	Phiu
Expense	Sah soug
To explain	Ko
To extinguish	Se
Eye	Núk

F.

Face	Dong
Facile	Jambe
To fail	Su
Faint	Temi
Fair	Kapo
Faith	Tendu
To fall	Qieson
False	Ankeu
Fancy	Zatso
Far	Tharín
Fat	Gyápe
Fast	Joba
Father	Apo
Fear	Nimdo
Feather	Piando
To feel	Nom tá
To feign	Au kyap
Female	Pomo
Fern	Kieu
Fever	Darr
Few	Ataichi
Field	La
Fight	Chadau
To fill	Kang
To find	Thop
Fine	Chepo
Fire	Mí
First	Uqenle, benle
Firm	Tampoo
Fish	Nya
Flay	Dunda
Flat	Thiom rup rup
Flesh	Shia
To float	Chukadun
Floor	Chinsa
To flow	Juk, chu
Flower	Nimto
Fly	Biausem
To follow	Dar
Ford	Chugeráp
To ford	Chuge
Foreigner	Peeling
Forest	Ugachu
To forget	Je
Fork	Sátú
Former	Inlé lo
Forward	Unle
Foul (dirty)	Choke
Free	Tautau
To freeze	Kié
Fresh	Sapo
Frequent	Ataura
Friend	Toko
From	Dang
Front	Dimka
Frost	Bamok
Frown	Chedanlou
Fruit	Biembo
Frugal	Sakké
Full	Bomcham
Funeral (burning)	Ruh mí
Funeral (burying)	Ruh toug
Fur	Púh
Fur coat	Lok charo
Future	Shuletou
First	Uglé
Flame	Núché
To force	Onché kyap
Force	Onché
Fox	Guamo
To forgive	Kyom tang
Fraud	Yala
Free	Tautau
To frighten	Do
Flour	Phi
Food	To
Foot	Joug

G.

Gain	Kiepsan
Game	Tsun
Garden	Sheeu
Gate	Goin
Gather	Jukba
General	Mapoo
To get	Top-pa
To give	Phin-wa
To be glad	Semga-wa
To go	Songpo
Goat	Ra
Gold	Se
Good	Lem
Gradual	Kalu kalu
Grass	Pang
Grey	Chataudo
Great	Chiempoo
Green	Zangpoo
To grind	Takpa
To grow	Kiwa
Guard	Kíga
To guess	Tsi lap-pa
Gun	Meuda
Gently	Thlú-thlu
God	Thla
Glue	Chu lak
Guide	Lam temké
Gift	Phinboo
Girl	Pomo
Grain	Henchong

VOCABULARY.—(*Continued.*)

English.	*Bhuteah.*
Grape	Chikdurba
Gunpowder	Ze
Gunn	Piu
Giant	Miringkiam
H.	
Habit	Dí tum
Hair	Kya
Hall	Phie
Hand	Lakko
Handle	Kyeu
To hang	Paingwa
Hard	Takta
Hare	Kagur
Harm	Kú
Hasty	Jawa
Hay	Pang kampoo
He	Pha
Head	Goh
To heal	Men-pa
To hear	Injew-wa
Heart	Donyín
Heat	Temo
Heaven	Jikhé
Heavy	Chikche
Heel	Tingpo
Height	Rintoo
Hill	La kyou ri
Herd	Nogo
Here	Bawa
To hide	Tempo
High	Phidi
Him	Núk lap
Hind	Logu
History	Biang-chang
Him	Páo
Hoar-frost	Phako
Hog	She-wa
To hold	Boba
Hole	Doura
Hollow	Shoug
Hope	Rojoo
Horn	Ta
Horse	Tumoo
Hot	Khijun
House	Phojow
Husband	Teuda
Honest	Sem malebo
Hypocrite	Seo kyappa
To hail	Shambo
Hat	Latimle
Hill-top	Kenki
His	Uga
Hither	Chuso
Hour	Tarin kazu
How far	Kum
How	Kazop
How much	Tenpokazo
How often	Tòpá
Hungry	
I. & J.	
Ice	Kiek
Idle	Chemamnu
Ill	Nahpo
Illegitimate	Geutache
Image	Dé

English.	*Bhuteah.*
To imitate	Dashu wa
In	Na
Incense	Puh-te
Income	Poh
To increase	Lookchpa
Incurable	Meudi-mi
To inform	Di tueug-wa
To injure	Chougphia-wa
Innocent	Pato
Instead	Di tenda
Insurrection	Ngolok
Iron	Cha
It	Keu
Itch	Yawi
Ivory	Paso
Impudent	Leulok
Insect	Nyomtik
Insolent	Teudook
Interpreter	Dashu
Ink	Naksa
Ink bottle	Nak bum
India-rubber	Kík
To jump	Shu biawa
Jewel	Chokah
Jail	Tuntoug
Jest	Tsun
To join	Tu-wa
Journey	Lam
Justice	Teuda
Jungle	Nachen
K.	
To keep	Ja-wa
Kettle	Badi
Key	Dimik
To kill	Doktun-kyap
Kid	Raphigu rigu
Kidney	Kyako
Kind	Geudu
King	Gyalpo
Kitchen	Capchen
Knee	Pomoo
Knife	Ki.
To kneel	Pomoo so-wa
To knit	Thla-wa
Knock	Jogtip
To knock down	Jogtip kyaptaugpa
Knot	Dofu
To knot	Dofu kyappa
To know	She-wa
To kill	Se-wa
Knowledge	Gue-shi
L.	
Labour	Du
Lac	Lak
Ladder	Kyako
Lake	Tso
Lance	Chiao
Lamp	Laou
Land	Sa
Language	Kāché
Last	Tamcheki salé
Late	Goji
To laugh	Gawa
Law	Katim
Lazy	Chi mamnu

VOCABULARY.—(*Continued.*)

English.	*Bhuteah.*
Lead	Cho lapch
Leaf	Shomda
To leave	Gou-pa
To give leave	Goupo tangwa
Leech	Pepo
Letter	Yego
Level	Hiom
Lie	Ong
Life	Sok
To live	Sen pa
To lick	Dak pa
To lift	Thlow pa
To light	Mi pa
Like	Chiko clow
Lime	Chune
Line	Ring
Lion	Zik
List	Toh
Little	Chougchu
Load	Tho
Load (horses)	Ta ke
Lock	Gú chá
Long	Ring thoug
To look	Táwa
Loose	Thlo
Loophole	Da-cho
Lean	Biye ko
Left	Yon lé
Leather	Kompú
Low	Olé
Leg	Ye
Lightning	Lok

M.

Mad	Shempo
To go mad	Shempo teu pa
Man	Mi
Map	Thua
Mare	Gumo
Mark	Cha rau
To mark	Dak kyap-pa
Market	Thom
Mean	Piau lo
Measure	Tsemo
To measure	Jhe-wa
To meet	Phip pa
To melt	Shu wa
Memory	Tau zu
To mend	Tsa wa
Mercy	Geudu
Metal	Zar
Middle	Buna
Milk	Ourm
Mine	Niji
Minute	Tam
Morrow	Mi lou
To miss	Ma pho wa
Mistake	Ma miyon
Maiden	Meu shám
To mix	Dí wa
Model	Tsé jó
Monkey	Pu
Month	Dao
Moon	Dao
More	Tarou
Morning	Topa
Moss	Mamo
Most	Tamché thlako
Mother	Amo
Mountain	La-ri
To mount	Shen pa
Month	Kha
Much	Mangpo
Mud	Gye gda
Mail	P'áuche
Chain mail	Cha ta
Male	Phogra
Manner	Chepo
Mat	Baolo
Messenger	Zinkoff
Mason	Tzek go
Mane	Hyare
Moustache	Giaro
Music	Tim tim
Musquito	Biangmar
Married man	Nyen kyapie
To marry	Nyen kyap-pa
Married woman	Pomo di poja kyap
Maid	Poja ma kyap

N.

Nail	Chaze
Naked	Gimo
Name	Ming
Narrow	Tampo
Navel	Takta
Near	Ta myeu po
Need	Ko
To need	Nan she pa
Neither	Mena di mena odi
Neighbour	Khyim san
Net	Thu
Nettle	So cha
Never	Namo miye
New	Sapo
Night	Phiru
Nitre	Zangdu
No	Mia
Nobody	Ka mig
Noise	Ara
Nono	Kande mi
North	Chang
Nose	
Not	Mia
Now	Tator
News	Loju

O.

Oak	Char sheeng
Oat	Nar
Oath	Nga
To take an oath	Nga sawa
Obedient	Yoko
To obey	Yoko phiawa
To oblige	Auchi plua wa
To offer	Phiu lap pa
Oil	Noom
Old	Nyengpo, gapo
Often	Mangpo
Olive	Kum shing
On	Tenlé
Once	Tempo chi
One-eyed	Mik ja
Only	Deuda
Open	Pho
Opportunity	Maphum
Or	Yau
Orange	Tselúm
Order	Ka
Other	Jemé
Out	Paukha
Oven	

VOCABULARY.—(*Continued.*)

English.	*Bhuteah.*
Oval	Tsonju
Over	Yorté
Own	Ugara
Ox	Laug
Owl	Ougam
Ours	Ngachi
P.	
Pace	Kompo
Pack	Lako
Pain	Zeoin
Palate	Kyenen
Pale	Douru
Palm (of hand)	Laktee
Pan	Pané
Paper	Shigo
Parapet	Kyaug
Pardon	Qoupio
Part	Keo
Past	Muousa
Path	Kiku
Pattern	Tsejé
To pave	Doutim zo-wa
Pay	Poh
Pea	Tiwa
Peace	Chiausa
Peacock	Mabja
Peak	La
Pearl	Motik
Pen	Ni ogo
Pension	Lé dú
People	Tsén
Pepper	Yem
Perfect	Thampoo
To persuade	Ku kyappa
Petition	Shu
Picket	Sumjapo
Picture	Pá
Piece	Domta
To pinch	Tsamohum tap
Pine	Shingbo
Pipe	Kaugyor
Pistol	Paktun menda
Pity	Loh mandeo
Place	Eu
Plain	Tong
Play	Zim
Plenty	Maugpo
Plough	Langmo
Plum	
Plunge, to	Chu ya-wa
Pocket	Gyepchu
Point	Tsiu
Poison	Túk
Poor	Tiyangka
Post	Pauche
Pot	Sang
Powder	Zdé
To praise	Lem lap pa
To pray	Thla cho wa
Present	Yeu
Priest	Qelong
Printing	Pa
Prison	Timsu
Perhaps	Mainé
To promise	Kaplo
Proof	Dembo
To pull	Teupa
Pumpkin	Niangu
To punish	Timtaupa
Pure	Kapo

English.	*Bhuteah.*
Purse	Krechu
Push	Thloko tangwa
To put	Jhawa
Putrid	Limcha
Paint	
Patience	Gu
Plunder	Pioh
Possible	
To pour	Lokpa
Price	Goug
Proud	
Profit	Kyepsau
Partridge	Kaug hong
Pigeon	Phuoleu
Pillow	Nga
Plate	Zam
Potato	Kin
Precipice	Kije
Penknife	Nyik dhi
Q.	
Quail	Tougmook
Quarrel	Thamo
Quiet	Nyamthlo thlo
Question	Katneen
Quantity	Shong
Quality	Pieri
Quarter	Duntakchi
Quick	Tato
Quill	Dokau
Queen	Gyalmo
R.	
Race	Tá pang
Radish	Laphoph
Raft	Tá pa
Rage	Kapchu
Rail	Row
To rain	Yunge kyap
To raise	Tuwa
Rank	
Rate	
Rather	Meuro
Raven	Kola
To reach	Khelep
To read	Dogpa
Ready	Thaudé
Real	Dembo
To reap	
Rear	Shute
Reason	Tenda
Rebel	Thapmi
Rebuke	Chickosa lap
Receipt	Nekté
To reckon	Gianpa
To recognise	
Record	
To recover	Theep pa
Red	Mapá
To redeem	Baongwa
Reed	Tatah
Regent	Zongpoon
Regular	
Rein	Thrap
Relation	Niu nylusen
To lease	Tangwa
To relieve	So de phiawa
Remainder	Thlatu
To roast	Miseek wa
Rock	Dophum
Root	Rácha

VOCABULARY.—(*Continued.*)

English.	*Bhuteah.*
Rope	Tanko
Rose	Nuintoh
Rot	
Rough	Rigo
Round	
To rub	
Rude	
To ruin	
To run	Chionpa
To rush	Poor kyap
Rust	Chakso
Rascal	Pa thomché
To refuse	Mamphin
To remain	Sole kamlep
To remember	Tenzun
To repent	Dik sao
Reward	Tin
Right	Yé
To ride	Shunpa
To rise	Lonpa
Road	Lam
Robber	Ao komgani
Roof	Kun
Restore	Lok phin
Rice	Choom
Rich	Phioka
Ring	Juki
Ruby	Chong
	S.
Sacred	Lougpun
Sad	Semduk
Saddle	Gá
Safe, to be	So
Sale	Chong ; to sell, chongo
Salt	Char
Salute	Chabu ; Salam, chabi shu
Sand	Kiebo
Satin	Gn-ché
To satisfy	Depo-phi
To save	Sobo-phiag
To say	
Spoon	Túm
School	Yikkan
To scratch	Yonda
To seal	Thé tsi
To search	Tsen
Season	Taking bun
To seat	Deogo
Second	Jemé
Secret	Kashop lap
To see	Ta
Seed	Sangen
Seize	Shi
Self	Ngari
To send	Kiego
Sensible	Go shib
To separate	Ranso phi
Serpent	Bin
Servant	Biaro
To settle	Tsidu ky-ap
Shade	Di sip
To shake	En happa
Shame	Ngosta
Sharp	Nyempo
Sheep	Luk
Sheet	Yanlu
Shell	Bukhim
Shoe	Thlam
Sandal	Kotip
To shoot	Mend kyap

English.	*Bhuteah.*
Short	Chúnkim
Shot	Gontok
Shoulder	Poogpo
To show	Tengo
Shut	Clowa
Side	Suka
Sign	Lakhen
Silence	Katsúm
Silk	Tsa
Silver	Nguí
Single	Bumchi
Skull	Go
Slave	Kengyao
To slaughter	Se
To sleep	Nye
Slow	Galu
To smell	Thin namgo
Smoke	Dubak. Verb, dubak tango (a pipe) g-anza tungo
Smooth	Mem-ru-ru
Snow	Kao
So	Dem
Soak	Chu bango
Sober	Mirow
Soft	Nyom nyop
Soil	Sa
Soldiers	Pú
Son	Poeho san-nyim
Sore	Ma
Sort	Liu
Sound	Kay
South	Thlo
Span	Patsen
Speak	Lap
Spell	Pho
Spin	Lazou
Spittle	Tsunak
To spit	Kawa
Spot	Riko
Sprain	Niu
Square	Tupji
To stab	
Stable	Takhyún
Stack	Pong
Staff	Tatah
Stag	Khashia
Stake	Shingze
Stale	Memgpo
To stand	Loudewa
Star	Karmo
To start	Jugo
Steam	Kelam
To stay	Gudego
Steel	Cha
Stiff	Takta nigo
Stomach	Supho
Stone	Doh
Step	Kompo
Storm	Long-cha
Straight	Tangpú
Strap	Chapgu
Straw	Soma
Strong	Guya
Stretch	Ng-ag
To strike	Sewa
String	Thako
Stupid	Shempo
To suck	Myang
Sudden	Chapochick
To suffer	Semduk che
Sufficient	Ta

VOCABULARY.—(*Continued.*)

English.	*Bhuteah.*
Sugar	Chima
To suffocate	Kasup
Sulky	Gonia
Sulphur	Si sa
Summer	Biah
Sunrise	Njun ghao
Sunset	Nyim tembo
To support	Tujag
Sure	Namo
Surprise	Dotie
To suspect	Een noweenpa
To swear	Nga sago
Sweat	Tsepo
Sweet	Roko
To swell	
Swim	Che kyap
Sword	Kiring
To sharpen	Kinda da
Spend	Se-go
Spear	Dsong
Stick	Kao
To stop	Gak goo
Sahib	Sahib
Salam	Chapew
Saw	Sogli
Scales	Táng
Shallow	Tingmendú
She	Moo
Sky	Num
Snowpeak	Kao La
Some	Kendi
Sometimes	Pashap-pashap
Soon	Atsi shule
Spring	Sakha
Spy	Koom
Steal	Kumky-apgo
Steep	Phia
Stockade	Taptioh (wood) tapra stone
Scissors	Kimtsi
Spade	Tok si
T.	
Table	Chenté
Tail	Jukma
Tale	
To talk	Lappa
Tall	Ringkiam
Tame	Bekú
Target	Bachapsiye
Taste	Lebdu
Tea	Jha
To teach	Thlabhang
To tear	Thre wer
To tell	Tenuna
Temper	Semkateyu
To tempt	
Tender	Nyempoo
Tent	Goor
Thief	Aken
There	Phaté
Thick	Bomkiam
Thing	Chako
Thirst	Otsong
Thorn	Satú
Thought	
Throat	Kié
To throw	Kotangwa
Thumb	Tepché
Thunder	Dudiwi
To tie	Chinpa

English.	*Bhuteah.*
Tight	Teng
Till	Tataren
Timber	Sheeng
Time	Tastara
Timid	
Tin	Chaka
To tire	Tanchèpa
Tobacco	Tangku
Toe	Kampe tepché
Tooth	So
Top	Yaté
Torch	Shamé
To touch	Nyiopa
Tough	Takta
Trade	Tsonpen
To travel	
Trap	Nimjek
To treat	Tatara tapp
Trick	
Triumph	Mabung
Truce	
To trust	Tangpo kyappa
To tumble	Gewá
To turn	Geewa
Twin	
To twist	
U.	
Ugly	Tangpubé
Ulcer	Tembobé
Umbrella	Nying doo
Unable	Mionbe
Unanimous	Lemchi
Uncle	Ako ajang
Uncommon	
Uncover to	Phuwa
Under	Oté
To understand	Kojepá
To undo	Phuwa
Unexpected	Jaba
Uneven	Minyambé
Unfair	Miynpové
Unfortunate	Tsodè mendu
Unhappy	Gusomi
To use	Yok phia
To urge	
V.	
Vacant	Tongpu
Vain	
Valley	Kyogn
Valour	Nyagu
To vary	Tsote kyap
Vegetable	Gyor dok
Vein	Tsa
To view	Tap
Virtue	
Voice	Ké
W.	
To wade	
To walk	Longpa
To walk	Kanton juwa
To want	Gopa
Warm	Tum
Warrior	Mami
Waste	Kyemepu
To watch	Goopa
Water	Chu
Wax	Pia tsi
Way	Lam

VOCABULARY.—(*Concluded.*)

English.	*Bhuteah.*	*English.*	*Bhuteah.*
Weak	Shé mendú	Work	Yok
To wear	Kyenpa	To write	Yugopa
To weigh	Jeika kyappa	Wrong	Zem mendu
Well	Onko	Wrist	Tsi
Wet	Koh	Worth	Gong
West	Nub	Worst	Malepo
When	Nambo		
Where	Koonabo	Y.	
Who	Kabo	Yard	Chutó
While	Tatora	To yawn	Yé piah
Whip	Techa	Year	Loh
White	Kapoo	Yellow	Lepo
Wife	Mobi	Yet	
Wind	Long	Your	Ken
Wing	Shokoo	Young	Tachibé
Wine	Ara		
With	Nyampoo	Z.	
Woman	Pomo	Zeal	Dook
Wood	Sheeng	Zelt	Lebdu
Wool	Pébo	Zinc	

M.—THE MILITARY CHARACTER OF THE BHUTEAHS.

The Bhuteahs may be safely considered a race whose physical formation is above the average. Their tall, athletic-looking forms, their sinewy legs, afford a greater display of muscle than is ever seen in any Indian race. Turner, who appears to have formed extravagantly favorable notions of everything Bhuteah, says that he does not think in any country could be found an equal number of men with such magnificent forms. I think this opinion is too favorable: an English regiment would, I imagine, be able to show an equal number; but in India, from constantly having before us the absurdly small limbs of the natives of Hindustan, when we see men of fine physical formation we are very apt to exaggerate the extent of it.

The broad cheek-bone, massive under jaw, and small elongated eye of the Bhuteahs, plainly bespeak their Mongolian origin; and like all of this great division of the human race, they are very ugly, though not much so as the Goorkahs, and some other branches. The Bhuteahs often have very broad, open, pleasing countenances, though a handsome Bhuteah is perhaps never met with; and I should say this was a characteristic of the Bhuteah. They all appeared to me of a very mild, cheerful disposition, often approaching stolidity, yet seldom running into moroseness.

The Bhuteahs cannot be said to be an active race, nor are they enduring; for though many of them are capable of carrying large loads great distances, they are surpassed in this respect by other hill tribes, as the Lepchas and Cossyahs. They have few games, and such as they practise require no activity and little bodily exertion. They are not hunters either, nor do I think that they are remarkable for their walking powers; we generally found that untrained as we were we could keep up to them. The dress of the Bhuteahs is admirably adapted for a hard life among the hills. It consists of a long loose coat (in fact nothing else than a dressing gown,) made of coloured blanket, which reaches when let down to their ankles, but which is fastened up by a belt to the height of their knees. This coat can either be fastened round the neck or be thrown open, leaving the whole chest free, and the sleeves are long and loose. Except the ancient kilt, I can hardly imagine a better description of dress. In the daytime it is loose and free, the chest is freely

exposed, the legs are bare and unencumbered, and at night it can be let down to the feet and so form a very comfortable sleeping garment. They seldom wear a head-dress of any sort, but sometimes carry a scarf about them, which they wrap round their head at night. Their only pocket lies in the folds of their dress, between the skin and the coat, and every Bhuteah goes about with his little wooden cup and his "pawn" box. Every man carries a long knife, which is used for everything, from cutting down a tree to digging a hole. When they are walking, the point of this is slung up to the belt by a loop to keep it from dangling about the legs. They seldom wear shoes of any sort, but some men are seen with a sandal cut out of raw hide and attached to the foot by a loop through the big toe. The better classes, however, wear the woollen Thibetan boot on all occasions, and on going through snow all wear it who can get it. They carry their loads in the large baskets, called *kiltas*, which appear to be in use throughout the Himalayas; these are attached by cane straps to their shoulders, like the yoke knapsack.

A favorable opinion cannot, I am afraid, be passed on the Bhuteah qualities as soldiers, for they are wanting in the first and most necessary quality, —courage. The reports of the missions show that this opinion is pretty unanimous; Eden calls them "the most despicable soldiers on the face of the earth." Pemberton says whatever doubt there may be in other countries of the saying, that discretion is the better part of valour, the Bhuteahs appear to recognise its truth to the full, and subscribe to it willingly. Griffiths denies them the possesion of any courage at all, and though Turner does not actually say so, his ludicrous description of the attack of the rebel forces on Tasichozong infers the same thing. But all these opinions are those of men who have merely passed through the country, and who have never been brought into hostile contact with them, and the experience, therefore, of the late operations is likely to afford better opportunities for forming a just opinion on this subject. Yet I fear the opinion can be hardly more favorable. It was natural to expect a total want of military discipline among them; it was probable that we should find their leaders modestly declining that place in battle which the officers of more civilised nations covet: but I think it was also fair to expect that cases of individual courage would be displayed, for I think that whatever may have been the want of discipline and unity among our Asiatic enemies, and the want of faith in their leaders, it has generally been found that cases of very great and glorious individual courage have been shown. I think every campaign produces instances of it, but here this quality was wanting, here there were none who came forth singly to challenge their British foe. I think there was no instance of men fighting grimly to the last, with no thought of retreat, no cry for mercy,— no, even when driven in a corner, when surrounded by merciless Sikh and excited Englishmen, despair even did not appear to nerve their hearts. The despairing rush, the stern courage of the man at bay, was not there, and a few frightened passages with their "daos" was all to show that they were not completely overcome with fear. In short, I have never met a race more completely wanting in courage.

The arms of the Bhuteahs consist of matchlocks, bows and arrows, slings, stones, "daos," and they also use catapults, indulge in various kinds of booby traps, and delight in the hidden dangers of "panjees." Their matchlocks are wretched clumsy weapons, mostly too heavy for one man to fire, and they consequently use them by resting them on a wall, tying them to a tree, or putting them on a comrade's shoulder. The bullet is a bit of iron

or lead roughly beat into a circular shape. These matchlocks, however, carry a great distance, an instance having occurred at Dewangiri of a man having been killed at 800 yards, and they are always effective up to 400 yards. The Bhuteahs, however, are not good, though they are certainly careful shots, and I do not see how they can be expected to be the first, because the scarcity of ammunition is so great that they never practise, and I should imagine that it would be very difficult to find a Bhuteah who has fired 100 shots in his life. With their bows and arrows they make much better practice; the former are somewhat long and strong in the pull, and as their arrows are sharpened to a fine point, their penetration is sometimes very great, and would easily transfix a man if they caught him fair. As usual, it has been asserted that the arrows are poisoned; but this was satisfactorily refuted during the late operations, for though many men were wounded, none of the wounds ever showed symptoms of being affected by poison: and General Dunsford, with a view to set the question at rest, sent some of the black pasty-looking substance to be found on every arrow head, and said to be poison, down to the medical authorities in Calcutta for test. The answer he got was that after having freely used it both internally and externally, in no instance had any signs of poison appeared. But if they are not poisoned, many of them are barbed; and as the head of the arrow is always purposely placed on very loosely, if it penetrates beyond the barb it sticks in the wound, and can only be extracted with difficulty and after considerable incisions. All things considered, I am not certain that the bow and arrow is not in the hands of a Bhuteah a more formidable weapon than the matchlock, for they practice a great deal more with the former, and though the latter does carry further, it is after all but seldom that a chance for a long shot can be got among these forest-clad mountains.

The Bhuteah has simply no idea of using a sword; those which they carry are extremely cumbersome and awkward, and they scarcely ever use it except as a jungle knife. In my rambles through their villages I frequently tested their skill in the use of this and their other arms, but the result has always been a display to which the last mortal combat of the hero and villain in a soldier's drama is deadly skill. I dare say if a Bhuteah got a fair cut at one, the result would not be altogether pleasant; but then one does not give an adversary such chances, and I should fancy that nothing was easier than to dispose of a dozen or two of Bhuteahs—one down, the other come on. The fact is that the Bhuteah art of war has altogether excluded any such forward proceeding as single combat.

I have never seen Bhuteahs using the sling, but it is evident that this and the use of stones in defending a hill position is not altogether to be despised, and though perhaps it is not often that they would cause any serious casualty, I have seen a man killed dead with a stone.

The catapult is also used by the Bhuteahs. It consists of an erection very like the "horizontal bar," to the centre of which a long beam is tied, so as to be capable of turning on its pivot. At one end of this beam a rough spoon is shapened to hold a large stone, and the other end is weighed down by six or eight men, working it gradually up and down till, having thus imparted sufficient impetus, the stone is discharged from the spoon. It does not carry far, and I don't know that any one was ever hurt by one: in fact they are very useless contrivances, and from the space they take up in a work, and the number of men they take to work them, should be regarded rather as an advantage to the besiegers than otherwise.

Booby traps consist of a net filled with large stones, and so placed as to hang over a portion of the path below. The idea is to cut it just as the attacking force comes below it; but considering that few hill paths admit of more than single file, it is evident that it is a very poor contrivance. Many of these were cut in the late operations, yet the boobies were not caught.

Another invention of savage warfare, which is common to all the tribes of our North-Eastern Frontier, is what are known as *panjees*. These consist of short, sharp spikes of bamboo, which are placed round the approaches to a position, and also on the pathways, to deter pursuit. Men should be warned to look for them, and knock them down as they go along, because they render a man "*hors-de-combat*" for some time, cases having occurred where they have run through a man's foot, boot and all.

The number of armed men the Bhuteahs could bring into the field is a question of great importance with reference to this section, and it is one to which I have given considerable attention. It was not easy to discover this, for the common people were generally ignorant, or at most could only give an approximate guess at the numbers; and though doubtless the Bhuteah officials who passed through our camp knew it was impossible ever to find them alone, and it was not the slightest use trying to question them in presence of their followers—many of whom were perhaps attached to them for the express purpose of spying on all their actions—I had therefore to go through a tedious system of indirect questions to arrive at my want, and after a good deal of changing, &c., the figures at last settled down as follows: Paro, 2,400; Timpoo, 1,200; Angdo, 1,500; Puna, 1,000; Taga, 400; Tongsa, 3,000. This represents the number that each chief could bring into the field at all points; and of this perhaps 10 per cent. are armed with matchlocks, the rest with bows and arrows and "dows." Of the matchlock men, one-fourth could muster the defensive armour of the Bhuteah, viz. helmet, shield, &c. These are to be considered the *élite*, the *creme de la creme* of Bhutan warriors; and if every effort was made, it is possible that three-fourths of these numbers could be brought by any chief at any one point in his own province. This estimate also agrees sufficiently near with the number of men that assembled at various points to attack, as in February 1865. The points at which we were attacked are as follows: Chamoorchee, Bala, Buxa, Bishansing and Dewangiri; and I find that at Chamoorchee there were only about 150 men under the Tsangbe Tooma, of whom some 15 or 20 had matchlocks. At Bala the following chiefs were present, viz. Paro Penlow, Puna Zongpé, Deb Zimpé, Lama Zimpé. Now, according to the estimate I have made above, 2,400 is the maximum strength of Paro: 2,400—150 at Chamoorchee = 2,250, of which three-fourths, 1,687½, or say 1,650 men in round numbers, for the Paro Penlow. The forces of the Puna Zimpé only amount to 1,000, of which the three-fourths is 750. Now, if we remember that the Deb Rajah was at Punakha at the time, and that he personally did not take any part in the operations, I think it fair to infer that he must have had a large portion of the troops of the Puna Zongpé at Punakha, especially as, as will be afterwards seen, he could not have got help from the Timpoo Zongpé. Thus allowing that the Puna Zongpé brought 250 men with him, and the Deb and Lama Zimpé 150 between them, which is a liberal estimate, considering that these same individuals, when they came as envoys and every effort was made to swell their pomp, could only muster about 30 matchlock men and 100 ragtag and bobtail; then adding all these together we find that there must have been 2,050 men at Bala, and this agrees pretty nearly with the

number which was actually reported to be there. At Buxa the chiefs who attacked us were the Timpoo Zongpé, Taga Penlow, and the Zoondoonier, and it was said that they had about 1,200 men, which will agree with the number which by the above estimate they could bring, viz. Timpoo, $1,200 \div \frac{3}{4} = 900$; Taga $400 \div \frac{3}{4} = 300 = 1,200$. At Bishansing a very determined attack was not made; the Angdophorang Zongpé did not appear against it in person: he was keeping his forces in hand in case the Tongsa Penlow in the confusion should try to seize and depose the Deb Rajah; and I was informed that there were only about 400 men there. The chiefs who attacked us at Dewangiri were under the personal command of Tongsa Penlow, and were the Jongar, Tashangtsi, Lingtsi, and Tashgaon Zongpés; and there were said to be about 2,500 men, rather over than under; then $3,000 \div \frac{3}{4} = 2,250$, and as it is believed that the Bhuteahs were helped on this occasion by some Thibetans, this would give it approximately. These calculations are exclusive of coolies, who go to swell the appearance of numbers very greatly.

Let us now suppose that in a future war with Bhutan all these leaders were heart and soul in the cause of the Deb Rajah, and sent him every available man to assist in the defence of the country; if our advance was to take place by the Bala route, it is possible that we might find arrayed against us the following contingents, viz. Paro, 1,600; Timpoo, 600; Puna, 500; Angdo, 750; Tongsa, 1,000=4,450 men; if by Buxa, about the same number; if by Cheerang, perhaps 500 more, or 5,000; and if by Dewangiri, including Thibetans, Towangias, and other odds and ends, perhaps 5,500. This is the most favorable case that could possibly be made out for the Bhuteahs, and I am far from thinking it at all probable that they would ever succeed in collecting such a number of men, but in these cases it is as well to put it at its worst. And it must also be noted that even if we determined to take the bull by the horns, not to attempt to disguise our plans in the least; in fact if we sent a circular to the Bhutan chiefs to say we should be happy to meet them on the hillside on such a day, the result would not be more. But I would ask those who have read Bhutan history, who know the utter want of unanimity amongst the people, what would be the result if we made a feint at one or more routes and advanced by a third; if we threatened Paro or Tongsa and struck at Punakha, how many men would these chiefs send their nominal master, the Deb Rajah. And, again, if reference is had to Pemberton, it will be found that he places the entire population of Bhutan at 80,000 (this being the outside estimate); of this say 40,000 represent the females, we have 40,000 males: and if we deduct from these the boys below 16, the old men above 60, the Lamas necessary to look after the monasteries, the men necessary to look after the villages and the herds, the men employed as coolies, the infirm, and lastly those who have no stomach for British bullets, it will be seen that my estimate of 9,500 fighting men for the whole of Bhutan is certainly not under the mark.

Though, as I have before said, the Bhuteahs are decidedly wanting in courage, they display a certain skill in the erection of field works and in their mode of attack that makes up for it in a great measure; and as they appear to have adopted the same tactics everywhere, it will be instructive of their talent in this line if I give a short account of what actually occurred at Bala.

To go back then to the time when after the first advance into the Dwars we had taken the whole line of Bhuteah frontier posts with little loss, and at the camp at Bala, there was no opinion but one of the most

supreme contempt for the Bhuteahs; they were lulled into security, talk already began of withdrawing the troops, and wagers were going about camp that the new year would see the force on its way back to the provinces. At Bala a stockade had been taken situated some way down the brow of the hill, surrounded with dense jungle, and with a distant and precarious water-supply. Why this position was occupied by us I am not aware, but I believe the chief reason was because the Bhuteahs had occupied it. But there seems to have been a strange fatality about our proceedings at this time: everything was done which ought not to have been done, and that which ought to have been done was omitted. For example, a garrison of 30 men was placed in this stockade; no attempt was made to explore the hill-side; no one even knew where the water-supply came from, though the head of it was not half a mile off and a line of bamboo pipes conducted it down to the stockade. While lulled in this security an event occurred which might have opened the eyes of the force at Bala. A dhobie disappeared suddenly; he had been seen last by some sepoys at the foot of the hill, and he was going up to the stockade with his master's clean clothes, but he never got there; he disappeared. There was no blood on the path, but he and his clothes had gone. And it was said I remember it as if it had been yesterday, for I was passing through our camp at Bala soon after with General Dunsford—it was said he was carried off by a tiger. This solution was accepted, and everything went on as usual. Some days after this again two sepoys of the 11th were going up the hill, and they were no more seen. There could not be any doubt this time that it was not a tiger which had done this, as stated in the report that came to General Dunsford; it was therefore termed a raid of the neighbouring villages. None appear to have asked where were the villages, but there being two or three huts within a convenient morning's walk across the hill, a party of a dozen or so made a picnic out there, and having burnt the empty huts, came back satisfied that Nemesis was appeased. The first of these occurrences took place, if I remember right, on the 6th January; the second several days later, and after the last, all again relapsed into their sense of security. The officers went bathing, shooting, and riding; the little Goorkahs, down in the camp below, went out shooting, but the garrison above was composed of Poorbeeahs of the 11th. They did not care for shooting, or hill-walking either, better perhaps if they had, for at daybreak on the 30th Lieutenant Millett, the young officer in command of the garrison, woke up by yells as from ten hundred jackals, and found himself attacked by an unseen enemy, for the jungle was very thick around.

It will be well at this point to follow the sepoys who had disappeared. One of them was killed, the other only wounded, lived, came back to us at Tapsee, and told us the following story:—They had been going up to the stockade with their arms, but with muskets unloaded and bayonets unfixed, when of a sudden a number of Bhuteahs sprang out on them from the jungle; his comrade was killed; he was cut down and disarmed; then both were hurried off by a bye-path, passing so close under the stockade that they could plainly hear the men talking. They were carried off to a place where he saw a large number of Bhuteahs; next day he was taken before the Paro Rajah and questioned. So in fact the Bhuteahs had been concentrating their forces under our very noses, and had profitably occupied the while by roaming about the hill, finding our weak points and seizing upon stragglers.

On the tidings of this attack reaching camp, a small reinforcement was sent up, and next day—next day only—a reconnaisance was sent out to

see what had become of the jackals. The party had scarcely gone 100 yards when, "hullo!" exclaimed one of the officers, "there's a breast-work," "and there's another," said a second; and so they looked and saw there were a good many breastworks: in fact mostly all around them, and before they had time to realise the fact both of them were knocked down, the one by an arrow, the other by a stone. Then straightway all the breastworks opened fire, and there came such a flight of stones and arrows and bullets that the party was fain to come back. This being reported below, a reinforcement of 300 men went up, and next morning a small column was organised for attack,—that is to say, within 60 hours of the first attack less than half of our available force was brought up from 2½ miles distant. Now 2,000 men with their hearts in the work can do a great deal in 60 hours, and so when this column advanced it was found that the hill above bristled with stockades and breastworks, which appeared to be occupied by a great number of men. The result was that the column came back to the stockade, and a council of war being held it was determined to evacuate and retreat below. This was accordingly done, and the Bhuteahs gained possession. Up to this moment then the Bhuteahs had been completely successful. They had succeeded in concentrating a force under our very noses, they had sent spies out over the hill and discovered our weak points, and by a combination of energy and skill which cannot be too much admired they had erected a series of field works, and by means of their commanding position, and without scarcely firing a shot, they had forced the evacuation of our stockade. It would be needless to show how much their success was owing to our own shortcomings. Such then is a fair specimen of their tactics in attack. They did the same thing at other places, Dewangiri, Buxa, and Chamoorchee, with varying success, depending mostly on the manner they were met; and it is therefore fair to infer that this is what they would do in future.

In defence they were not so successful. I have shown that a great number of stockades had been run up on the Bala hill, one crowning the other, and when General Tytler arrived to take command the position was really very formidable to a front attack. Very careful and searching reconnaisances were made, and it was found that both the flanks were vulnerable; a turning operation had evidently not been reckoned upon in the Bhuteah plan of defence. As the Bhuteah right offered most advantages, it was determimed to threaten their left front and attack the right. As days wore on, the Bhuteahs began to get lazy; the same activity in constructing stockades was not apparent, and when they had seen that numerous parties of ours had come to the bed of the river and searched the whole front of the position and gone away again without doing anything more, they concluded that the more we looked at it the less we liked it; but shortly after they found parties appearing on their left, and then of course, thinking that we meant to attack by this flank, signs of extraordinary activity were at once apparent, and stockades sprang up on this side with great rapidity. And as this opinion was confirmed in their minds by the increasing efforts we were evidently making to gain information on this point, they never doubted and threw up stockades wherever a party appeared. So it seemed it was almost possible to make the Bhuteahs place a stockade wherever we wanted them. But all this time information was being secretly gained regarding their right, but being quietly done the Bhuteahs had not the remotest anxiety regarding this flank; and so on the morning of the 15th March, when a reconnoitering party appeared suddenly within 100 paces of their flank stockade, and after having attracted their attention retired, and when

they looked down from above and saw redcoats collected below, they thought that we were going to attack them at last. When the guns opened they were confirmed in the belief; their only doubt was whether this might not be a feint to cover the real attack on their left, but as the day wore on, and nothing appeared on their left and the spies whom they had probably sent in that direction returned and reported that no one was stirring there, they believed after all we were going to attack their front. They kept very quiet, not attempting to return our fire, probably seeking cover against our shells, when of a sudden some shots were heard on their right; they looked and found their first work on that side already in our hands, and a stream of men in earth-coloured clothes pressing up to their main stockade. Then our whole plan dawned upon them, but it was too late, and in less than five minutes not a Bhuteah was to be seen. Completely outmanœuvred, they lost no time in evacuating their stockades and in diving into the jungles. Thus it will be seen that against a skilful attack they are poor defenders.

I think the operations of this campaign have proved beyond a doubt that though the Bhuteahs are proficients in constructing stockades, they have not heart to defend them adequately. They never stood a determined attack, and it has generally proved that if the attack has been energetic, they have never defended more than the first stockade, but run through them all one after the other; therefore all attacks on them should be energetic and sudden, and in attack they show no spirit. I have said that I do not know of a single act of gallantry displayed by an individual; I will add that I believe that there never was anything deserving the name of an assault made by them. They have no idea of skirmishing, or rather they lay somewhat too much stress on that injunction of it which enjoins the necessity of seeking cover. The Bhuteah plan of skirmishing consists in seeking cover and sticking to it also. They sometimes make night attacks, but never to go home with them, contenting themselves with advancing as far as there is cover, keeping up a flight of arrows till daybreak, when they retire. There was not much opportunity of judging what the Bhuteahs would do in the way of harassing warfare, cutting in on our communications, &c., but I do not think it probable that they would ever attempt much in this line; for such operations enterprise is necessary, and the Bhuteahs are an eminently unenterprising people. In fact a better summary of their qualities as soldiers could not be wished for than the words of their frequent panegyrist, Turner, who says that they "are so careful to conceal themselves that seldom anything is visible but the top of a tufted helmet or the end of a bow."

There is one quality, however, which redounds very much to their credit as soldiers; they are a singularly humane people, not a single instance of mutilation of the dead, or ill-treatment of prisoners, having occurred throughout the whole of the operations.

Notwithstanding the above unfavorable opinion of the military character of the Bhuteahs, it by no means follows that on the next occasion we may have to meet them that they should prove so completely despicable as they did in the last war; for it must be remembered that this was the first time they have ever been engaged in real fighting, and it is more than probable that the next campaign they will be better armed, and will have learnt to build better stockades and choose better positions for themselves. They will also have learnt something of our usual mode of attack, and will be better able to meet it. On the other hand, it must be allowed that we also have learnt something, and not the least of our lessons has been that which has proved to us that however contemptible the Bhuteahs may be as an enemy, we cannot dispense with the ordinary rules of war with impunity.

N.—MILITARY OPERATIONS IN BHUTAN.

In the foregoing section I have endeavoured to estimate rightly the military character of the Bhuteahs, and in doing so I have been constrained to place them low in the scale of warriors. I have said that they possess very little courage under any circumstances, and cannot be considered as formidable against either a skilful attack or defence; yet I hope in doing so I shall not induce any supposition that the conduct of an operation into the heart of Bhutan would be an easy affair,—far from it. To carry such an operation to a successful issue would require a General of energy, experience, and ability, and above all a steady man; that is, not a cautious man, but one who can combine the qualities of discretion as well as of valour, and who knows when to employ each.

Though the people are deficient in martial qualities, Bhutan is in my humble opinion one of the most difficult countries in the world for military operations, for it unites in one the two most difficult descriptions of country, viz. jungle and mountain, the jungle being, moreover, of the most impenetrable nature, the mountains of the most precipitous kind.

Before going further I would request that it may not be thought I have the presumption to offer the remarks which will follow on my own opinion, and that if there was a likelihood of the realities of military operations in Bhutan being shown by another, I would not have attempted the task. But I nevertheless submit, having been associated with the operations from their very commencement to their close, having had access to, and carefully studied, I may say, every paper that was ever written regarding the country, and having had the advantage of being in daily communication with, and of frequently hearing the unreserved opinions of such officers as Generals Dunsford, Tytler, Turner, Reid, Colonel Richardson, Major Lumsden and others, I have enjoyed facilities for forming clear and impartial views on this subject not possessed by others.

In considering, then, the conduct of offensive operations, it is better first to consider the extent of the operation, whether it is against the chief ruler of the country, supported by an united people enthusiastic in his cause, or against the Governors of East or West Bhutan, the rest of the country being neutral. A careful study of the map will, I think, point out Angdophorang as the key of the country, for a force once in command of this place can beat in detail all the forces the Bhuteahs could bring against it; and again, if we were successful in seizing and holding this place, we could seize on other points of strategical importance, such as Paro, Tasichozong, Punakha, and Tongsa before the Bhuteahs could concentrate sufficient force on either to prevent us, and even if we failed to obtain and keep command of the key of the country, the route by Cheerang, immediately in rear of Angdophorang, affords the shortest, easiest, and safest line of retreat.

It appears undoubted that the Cheerang route is very much the best to be adopted if an operation against the whole of Bhutan is contemplated, for it is the only one in the whole of Bhutan that does not cross either one or more large rivers or one or more snow passes. I am aware that two columns have been suggested, one advancing by Buxa or Cheerang, the other by Dewangiri; but it would appear that while the advantages of this place are few, the objections to it are numerous. The advantages are said to be—first, that it tends to draw off Eastern Bhutan from aiding Western, and *vice versâ*; second, that it has a better moral effect from the columns traversing a greater extent of country; third, in a country with such

bad roads, and such a dearth of supplies, it is better not to have too large a force on one line. The disadvantages are, dissemination of force, want of combination, nearly doubling the expense, and lastly, that the two first points, said to be advantageous, can be better obtained by other means, and as no supplies can be reckoned on in Bhutan at all, the third advantage does not hold good.

Regarding this point as settled then, the Cheerang column should be made of sufficient strength to overcome all the opposition that the Bhuteahs could bring to bear on any one point, and two light columns under chosen officers should assemble at Bala and Dewangiri. The proper strength to give these columns is discussed farther on; the use of them should be as follows. Having assembled at Bala and Dewangiri with as much parade as possible, and being commanded by officers selected especially for their intelligence and energy, they should then advance, being careful to disguise their numbers and giving out that they meant respectively to attack Tongsa and Paro, and then concentrate on Punakha, thus endeavouring by every means in their power to draw the Governors of East and West Bhutan as far away from Central Bhutan as possible, even if by so doing they should bring down an attack on themselves. It is probable that this would be found easy of accomplishment The Tongsa and Paro Penlows would surely concentrate all his forces each on his own capital; he would see that he was threatened, and if the plan was carefully managed, he could see no reason why he should support Punakha. On the contrary it is probable that the more unanimous the whole country was in feeling, the more would the Timpoo and Puna Zóngpés endeavour to send men to help Paro, the more would the Angdophorang and Puna Zongpés strip themselves of troops to aid Tongsa. They would think that if their turn came after that we would have to defeat Tongsa and Paro before we could come to them, and that the best way to keep us away from their own places was to help their brother chiefs on the east and west. But the success of such a scheme depends almost entirely on the intelligence of the officer in command, who should therefore be a man of the most ready resource; and it is scarcely possible that with such a man a column could come to much grief, even if it was attacked, for being a compact little column with no baggage, it could always retire with little loss, and its retreat would the more convince Bhuteah sanity that they had frustrated our effort.

To turn now to the main column. It has concentrated at, say, Chandrapara, a high healthy place on the banks of the Gourang, and without the influence of the jungle; care has been taken to prevent any attempt to communicate with the Bhuteahs; supplies have been collected beforehand on one pretence or another, and when the troops come up they find everything ready and advance at once, their arrival being so timed that the columns in feint have had time to create an alarm in Western and Eastern Bhutan. A small party, also under a prudent officer, has been watching the Bishan Sing road, carefully concealing themselves, quietly seizing any Bhuteahs coming past and sending them to the plains. Consequently when the main column arrives, no one knows anything about it.

Now on this route the first village is Cheerang, and therefore a light column pushed on and carrying along with it its supplies, could reach this place, at all events before any one knew and if they were lucky and the thing was well managed, they might reach Mazang before the advance was found out. Then if an express messenger was sent off at once by the Bhuteahs, the news could reach Punakha in two days and a half, Andgophorang some hours sooner, Tasichozong in three days, Tongsa and

Paro in four days ; that is to say, if the above-mentioned light, unencumbered column was pushed on ahead by forced marches, it could be at Piaregaon by the time the news reached Angdophorang, at Oolla by the time it reached Punakha, at Beafoo when it got to Tasichozong, and at Angdophorang before it reached either Paro or Tongsa. Under these circumstances then it is not too much to say that we could be at Angdophorang before help could arrive from any place but Punakha, nor that if a very determined assault was delivered at once, before the Bhuteahs had time to recover from their surprise, the fort would be in our hands. Allowing then that it has taken eight days to get to Angdophorang by forced marches, that every sepoy started with six days provisions for himself, and that the coolies carried 25 days' rations for one man, it follows that they could hold out for eight days longer, even supposing they found no grain whatever in the fort, and all the spare coolies were not at once sent back under a strong escort to bring up more supplies. But this is the most populous part of the whole of Bhutan, and if energy was used in beating up the villages, it is probable that grain could be seized in sufficient quantity to enable them to hold a few days longer. Meanwhile the main column, burdened with the reserve supplies, is gradually working its way up, the coolies being employed in carrying on the provisions, and each man of the force helping to the utmost. I am not so sanguine as to think (as has been done) that each sepoy could carry 30 days' provisions, and his accoutrements and blanket into the bargain ; but I do think that, bearing in mind the fact that a light column has gone before, cleared all opposition, and that the attention of the Bhuteahs will be more particularly directed to driving the advance column out of the fort of Angdophorang, the sepoys could carry 12 days' provisions with them. It is nearly certain that the whole force of Bhutan could not be concentrated at Angdophorang in less than seven days, and as by that time a further reinforcement could have reached with provisions for the advanced column for ten days more, and for themselves for ten days also, we should have a force of some 800 men in a strong fort, to hold our own for a time against 5,000 or at most 6,000 Bhuteahs. This may at first sight seem rather serious odds, but if the matter is carefully considered they do not appear so great. The Bhuteahs certainly have the advantage of numbers, but not a man among them is a soldier; they are badly armed, they are commanded by half a dozen different leaders, and they are astonished, if not depressed, at the manner in which we have suddenly appeared in the midst of them. On the other hand we have 800 picked soldiers, well armed, well disciplined, and under a chosen leader: the whole body is of one mind, and they have the prestige of a brilliant and successful initiative. I would not doubt the result for a moment, for without rashly under-estimating the difficulties, I should consider that a good plan of attack, and vigour and determination in its execution, would deliver the Bhuteah force into our hands ; and if it was not considered prudent to take the initiative and drive the Bhuteahs away from our vicinity the instant they collected, we could act on the defensive till the rest of our force came up with the reserve supplies. This supply should not consist of less than 45 days' provision for the whole force from the date of its arrival ; and the manner in which it should be brought up should be as follows. Each day a strong advance guard should go on to the next halting place and take up a good position. The rest of the force should be divided into rear guard, flanking parties, and main body. The main body should keep the road and give confidence to the coolies ; the flanking parties should prevent any attack from above ; and the rear should protect the rear. In this manner each march should be performed, the force not

leaving the advance camp till the whole of the provisions were up, and thus the Bhuteah would never get an opportunity of cutting in on our line of communication with any result, and there would be no necessity for us to leave depôts along the road, which I regard as the very worst system that could be adopted, unless the force at command was very large indeed, and time was no object.

In the above I have allowed the most favorable case for the Bhuteahs. I have allowed that they have run to the succour of Angdophorang directly on hearing of our arrival,—in fact I have allowed that the officers in command of the columns in feint have to a certain extent failed in their duty, for they have permitted the Paro and Tongsa Penlows to pay so little attention to their feint that they have detached a great part of their forces to help Angdophorang. But supposing that the Tongsa or Paro Penlows, on hearing of our advance by the Cheering route and receiving an urgent call for aid, hesitated to detach any part of his forces when he was himself threatened by a force, the exact strength or object of which he is not acquainted; suppose he vacillated and wavered as human nature tells us every man would in like circumstances,—each new uncertainty, each fresh doubt, that presented itself to his mind is something gained to us: in war, time is everything; and if, as is most likely, we succeeded in causing the Governors of the East and West to delay till our whole force had arrived at Angdophorang, the game would be doubly in our lands. For concentrated at Angdophorang with our reserve supplies and ammunition up, a small force could be left in the fort to guard them, while we struck at any fort we pleased, or at each in succesession, thus bringing our whole force to bear on the disseminated bodies. I say disseminated, because if once we were in possession of Angdophorang they could not concentrate near that place with impunity.

But judging from the past history of Bhutan, which tells us that from the first establishment of their power to the present time there had not been a single occasion on which they were an united people, I should imagine that the most probable effect of the plan of operation above described would be to induce each chief to hold to his own, regardless of others, and thus enable us to crush them in detail. We might lose men in attacking their forts, but it is improbable that we should be unsuccessful; and I believe that after we had taken one or two forts and destroyed them, they would open the gates of the remainder and give in their submission.

In considering an advance against Paro alone (the rest of Bhutan being friendly, or at all events neutral), it will only be necessary to change the details of our plan of operation; the means emplyed in above described plan would also be best here. A column should advance by the main road to Paro from Bala, as a feint to draw off their attention from the real advance, which should take either the Chamoorchee route, or that by the Loome La ridge, the latter for preference, though neither of them are very much used. The main column having also assembled in the vicinity of Bala, should march suddenly and gain the main ridge, and then a light column, preceded by a small party of picked men to feel their way cautiously, should push on with all speed to the Harchu bridge, which they might reach in four days. Having seized this, it would be advisable to wait there till the main column came up. By these means all the defences which the Bhuteahs might have thrown up on the road from the Bala would be turned, and though by the time we got to the Harchu bridge they would be fully aware of the fat, they would be doubtful as to which road we meant to take from this, or rather from Durbee, because from this place

we have no less than three roads to choose from to reach Paro. If then our intelligence department was in the state it ought to be, we should feint by whichever road they expected us to come, and go by another. In this way I think we could get to Paro with very little resistance, and though that fort, the strongest in Bhutan, is a pretty hard nut to crack, I do not doubt that we could do it with slight loss. The operation could of course be varied in different ways; but as long as a feint was made by one route, and the real advance by another, the principle would remain the same. It may here be remarked, with reference to this operation, that if a road was made, as I believe it is intended it should be, to the Thibetan frontier, by far the easiest line to invade Paro would be from thence by the Piem La and Dojezong.

If it was intended to attack Tongsa alone, let the column in feint, assemble ostentatiously at Dewangiri, then, disguising its numbers as much as possible, let it advance, startling the whole hill-side. The Bhuteahs would immediately concentrate on it, for this route offers peculiar advantages to them to do so; Tashgaon, Tashangtsi, Lingtsi, Beyaka, and Jemgaon, could all send their contingents by the cross roads which converge at or near Jongar. The probability is that no resistance to speak of would be attempted before the Monass bridge was reached, but from this it would commence. The Kooroo-chu bridge would be destroyed and the far bank stockaded, and the road probably at the Gomche Piah would be cut and a stockade placed above. It in short if the officer commanding acted intelligently in deceiving the Bhuteahs, all their thoughts would be directed to staying his advance. Meanwhile the real column of attack would have assembled at Bagh Dowar (no fear of their being found out here, for no Bhuteahs exist anywhere near it), and would then advance as quickly and quietly as circumstances would permit towards Tongsa. It could get to Jemgaon before the Bhuteahs concentrated on the Jongar route, would hear of it, and it would then be too late for them to do much towards staying our advance; and when they did find it out and hurried off to oppose it, the officer in command of the column in feint could give out real truths. He could acknowledge that his column was only feinting, and while the other column was to take Tongsa, his duty was to take Jongar, Tasgaon, and Tashangtsi,—an assertion which would assuredly draw these chiefs off from aiding Tongsa. Or if it was found the Bagh Dowar route was impracticable from any cause, the real advance might take place by the Cheerang route, the column turning off before it got to Angdophorang and crossing the Peele La ridge lower down.

I do not think that the strength of a force employed in these operations should be placed too low; therefore considering that the first detailed operation is supposed to be one against the whole of Bhutan united, I do not think less than 2,500 men should arrive at Angdophorang, a support of 1,000 men being pushed up as far as possible in their rear, say to Mazang; and each of the columns in feint, not being less than 500 men, and when it was no longer necessary to keep up the feint, should march back, converge on Bishan Sing, and form a reserve at that place. For each of the other operations 1,200 men should form the attacking column; 600 men should follow a short way in support, and the 500 forming the column in feint should, after the necessity of keeping up the feint was over, march and form the reserve. Of course in the event of our receiving intelligence that the Bhuteahs would be aided by the Thibetans it would become necessary to increase our force proportionately, and also if it was believed to be certain that some of the chiefs intended to remain neutral or co-operate with us, a proportionate decrease might be made. In addition to all this several more regiments should be held in

readiness for immediate service. The mere fact of our receiving a reverse at all is bad enough, but a reverse that is not promptly retrieved adds who can tell how many stones to the wall of disaffection which is always building in India.

I have heard men, officers of experience, say that they would stake their reputations that 500 men could conquer the whole of Bhutan, in proof of which they deduce the much worn arguments of Captain Jones having in 1774 taken Dalingkot and Buxa with two companies, and of Lieutenant Mathews in 1836 having defeated 600 Bhuteahs with 70 Sebundies; but while I allow that such feats were performed, I cannot agree their being considered the slightest proof that such a small number should ever be sent into the interior, nor can I shut my eyes to the fact that Generals Tytler and Tombs considered far larger forces necessary to take Bala and Dewangiri alone.

Connected with this question of strength of force is one which should not be left unnoticed, viz. whether artillery should accompany a force. If the forts already existing in Bhutan, and the stockades the Bhuteahs are in the habit of making, were really defended, as they might be, there can be no doubt that they would be very difficult to take; and it is for this work alone that artillery can ever be considered necessary. It is certain also that unless a road were made capable of bearing elephants or admitting of wheel carriage, the heaviest description of gun possible to take is a six-pounder Armstrong or a $5\frac{1}{2}$" mortar. I have seen the six-pounder Armstrong tried frequently, and I have had every opportunity of judging of its capabilities on service, and my opinion of the gun is that its use as a battering gun against stone walls and stockades is *nil*, and that its best use is in sending a shell with great accuracy into a clump of men; and though in the outer ranges of Bhutan the dense jungle precludes the possibility of ever getting a sight of an enemy, in the interior that is not the case, and it is probable that a good many chances of this kind would be found. With regard to the $5\frac{1}{2}$" mortar, I have seen it in action over and over again, and I never saw it do any damage yet; and I believe that I am supported in this opinion by those artillery officers who were engaged in the Bhutan campaign. It therefore appears that such artillery as it is possible to transport without roads is not of much use, and it is undoubted that artillery would increase the difficulties and hamper the movements of a force to a very great extent, and that if they are taken much of the dash of the enterprise must be dispensed with. To take guns is the slower and surer plan, yet something must be risked; in mountain warfare a commander who risks nothing is likely to gain nothing also. General Reid remarks with regard to this subject, that these guns could be carried on coolies. If this could be managed there is no doubt that the objections to taking guns with a force would be done away with. A detachment of picked English marksmen should always accompany a force. The matchlock of the Bhuteahs reaches further than our sepoys' muskets, and as it is not deemed advisable to let them have rifles, it is certainly advisable that we should be able to keep down the Bhuteah fire on an advance. I am ashamed to say that I once held the popular opinion that Europeans must have such an amount of baggage as would not compensate for the advantage of their presence. I was wrong in this opinion, having since had the pleasure of hearing General Turner's opinions on this subject. I am convinced there is no sufficient reason why English soldiers should not be as capable of going with as little baggage as natives.

We now come to the greatest difficulty likely to be met with in a campaign in Bhutan, namely that of carrying baggage and supplies. With

regard to the first, this may be reduced to a very simple question by ordering that there shall be no baggage that is not more than officer or man can carry on his own back. There is no doubt in my mind that this can be done, for I have done it myself in all weathers. I have slept out in the open air with nothing but a blanket in wind and rain and frost, and many others have done the same and never been a bit the worse for it. One blanket and a good fire to sleep round at night, and there is no cold in Bhutan to hurt one. Far from believing there would be any danger in doing this, I believe the excitement and exercise would bring the force back in the most splendid health.

But there is no getting over the commissariat; man must eat, and in work like this there must be no short rations. I hope I am not inclined to exaggerate difficulties, yet I say that I do not think the difficulties of transporting supplies in Bhutan have ever been properly appreciated. In fact I do not think that any one who has not seen the country can appreciate them. It may seem strange, and I know it did so to officers who have seen that forces do penetrate into the hills on our North-West frontier, and that against far greater opposition than we are ever likely to meet with here, yet there is no doubt that the roads met with in the North-West are as highways when compared with the mere ledges that are met with here.

The slope of the Peshwar hills are level ground compared to the almost invariably precipitous slopes here, and lastly in the Peshawur hills difficulties of attack and defence are decreased one-hundred-fold because there you can see what you are doing—here you must guess. In fact any one attempting to compare the difficulties of the two only shows his complete ignorance of the subject; they cannot be compared. In the North-West mules, camels, horses, ponies, elephants, can traverse with comparative ease all the roads which exist, and there are thousands of these animals procurable close at hand. The country in the vicinity of the hills abounds in grain; large herds of cattle roam over it, and there is always a large force within a few marches. On the Bhutan frontier the case is very different: the country in the vicinity, and Bhutan itself, produce nothing; neither grain or cattle, not a mule or a baggage animal of any sort, is to be found. There is scarcely even a human being; all is a vast, silent, impenetrable forest, and before we can think of commencing operations everything must be brought from hundreds of miles away—a great portion of it through a deadly country alike destitute of roads as of inhabitants. And again though the opposition in the Peshawur hills is greater, there need be no limit to the force sent; it is easier to feed 1,000 there than 100 here, and what a contrast do the bare open hills there present to the impenetrable jungle-clad mountains here. If the obstacles which man can create are ten-fold greater there, those which nature has erected here are a hundred-fold more. It may be considered that I have exaggerated these difficulties; I should be sorry if it is: for though I have certainly divested my views of the roseate tints in which operations in Bhutan have been clothed by some sanguine men, I do not think I have ever said they were insuperable. My object has been throughout this report to talk of things as they are—not as we would have them; and I have never said they were insuperable. My object has been to talk of things as they are, not as we would have them, and I do not think it right that a general officer should come to Bhutan with the idea that he is only to meet the ordinary difficulties of a mountain campaign, for such is not the case.

Fortunately the experience we have already gained of Bhutan proves beyond a doubt that there is no route in the whole country on which laden animals can travel till it is more or less improved, and this therefore induces the opinion that there should be no attempt to take any sort of baggage animal, and that coolies only should be employed for the carriage of supplies. If this is allowed (and it ought to be, for it is the opinion of Generals Tytler and Turner, Colonel Richardson and Major Lumsden), the difficulties of the campaign will be immensely lessened, for no food will have to be taken for baggage animals or their attendants, and this item alone will decrease the amount of supplies immensely. There need be no road-making, consequently no tools; therefore there is nothing to hinder an advance being made of some rapidity. Luckily then it is easy to procure any amount of coolies; Darjeeling alone could give 2,000, and the rest could be procured from the North-West, the Panjab, and Kashmir. It is difficult to calculate the number of coolies required without going into a too long statement, but bearing in mind the fact that coolies must eat as well as the men, I should say that for an operation extending into the heart of the country and lasting for three months, not less than two coolies to each fighting man should be allowed, and this arrangement is better than the purchase of baggage animals. Coolies, provided proper arrangements are made for their care, arrive at the scene of action without any trouble, and at the outside are not wanted more than six months. We know all the expense that must accrue from their services, whereas with baggage animals there is the primary cost of the mules, of their gear, the cost of their attendants' food before they arrive, and when they do arrive it is found that many have died, others are galled, while many are unserviceable from general weakness. But it is as simple and easy to calculate the difference of expense as of efficiency. Let us take the cost of 100 mules for six months; these could not cost, with their gear complete, less than Rs. 140 on an average; thus we have:—

	Rs.
100 mules @ Rs. 140 each	14,000
Pay of 50 attendants at 1 man to 2 animals @ Rs. 7 each, for six months	2,100
Food at three seers each per diem @ Rs. 2 per maund, for six months ...	2,700
	18,800

Now it was universally allowed during the operations in Bhutan that a mule could not carry more than double a coolie; therefore 200 coolies would carry as much as the 100 mules, and $200 \times 10 \times 6 =$ Rs. 12,000, the cost of keeping up 200 coolies for six months. But now compare the result in efficiency. Of 868 ponies and mules belonging to the Commissariat of the Bhutan Field Force on the 19th January 1866, only 14 per cent. were declared fit for moderate work, and only ·057 per cent. fit for any hard work; whereas of 760 coolies belonging to Holford's coolie corps on the same date, 94 per cent. were fit for any work.

During the continuance of the late campaign a very favorite subject of the newspapers was the advisibility of making a "dash" on Punakha or Tongsa, *i.e.* sending in a light column by forced marches to either of these places, burning it and making forced marches back again; and I only mention it here because the idea is so captivating a one, and was surrounded by so many plausible arguments, that it might receive more attention than it deserves. I wish therefore to show that the thing is impossible; the distance, as nearly as can be ascertained, to Tongsa from Dewangiri is 11 marches, or 133 miles. It has been invariably allowed that a cooly cannot carry more than 30 seers, nor a sepoy with his ammunition, arms, accoutrements, and blanket, more

than six seers; therefore allowing one cooly to each fighting man, they can carry between them 36 seers. It will also be admitted that no man can live through work like this sort on less than 2 lbs. of food per diem; and as the cooly must eat as well as the sepoy, it is evident that they are only carrying 18 days' grub for each of them. Consequently Tongsa must be reached, burnt, and the force be back at Dewanguri within 18 days; that is to say, that it must march 14¾ miles a day for 18 days; and no allowances can be made for such contingencies—I may say certainties—as opposition, and consequently delay, met with at various points of the road; and at Tongsa the bridges may be cut, the road being made impassable; accidents happening to coolies, and their loads having to be divided; men becoming sick, foot-sore, or wounded—nothing can be allowed for. If coolies desert, their loads must be carried by somebody—by the sepoys—rather than be left; the sick, the wounded, the foot-sore, must be deserted to certain death: there is no help for it; it is a race against time, a trial against nature; and a race and a trial that neither the *morale* or the *physique* of any troops in the world could endure.

I may be wrong in all this, but it is my firm belief that the nearest approach to a "dash" is what I have proposed. As no artillery should accompany a force, ten or twelve bags of blasting powder to blow in gates, &c., should go with it, carefully kept under a guard the whole way.

I have now given all the information regarding Bhutan which I have been able to procure, and though I feel this report is very far from being what it could be made by an abler hand than mine, I still hope it may serve to clear away some of the clouds which at the commencement of the late campaign prevented a right estimate of the country and the people being arrived at.

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Darjeeling,
12*th July* 1866.